# BRIEF PASSENGER CAR DATA

## —1952—


ETHYL CORPORATION

# BRIEF PASSENGER CAR DATA

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## 1952

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## NOTICE

The specifications and adjustments contained in this booklet have been compiled by the Technical Service Division of the Research Laboratories of the Ethyl Corporation from information supplied by manufacturers of motor cars, ignition apparatus, spark plugs, etc. None of this information represents the results of tests at the Research Laboratories of the Ethyl Corporation.

This information covers the essential characteristics, in ready reference form, of the 1952 passenger car models. It is correct at date of publication, but changes may be made from time to time by motor car manufacturers.

Data on horsepower, torque, compression pressure, etc., are that given by the manufacturer. Methods and technique of testing differ in various engineering departments, so these data are frequently not comparable for different makes of cars.

## GENERAL NOTES

### Valves

Valve tappet clearances are extremely important. Frequent checking of valve tappet clearances will add materially to the proper functioning and long life of valves. Clearances given on the specification sheets are for normal driving conditions. For heavy duty, such as heavy loads or high speed, it may be desirable to give additional clearance.

### Spark Plugs

The spark plug installed and recommended by the factory is shown first in the specifications with the corresponding AC, Auto-Lite or Champion spark plug shown as an alternate. These plugs are designed for average driving conditions. For heavy duty or high speed driving, it may be necessary to use a colder plug in order to obtain satisfactory spark plug life. The necessity for a colder plug is indicated by rapid electrode wear and, in extreme cases, splitting and cracking away of the insulator.

It is sometimes necessary to change to a plug which is hotter than the factory equipment plug for very light service, especially in metropolitan areas. If an engine is not pumping oil and the ignition system is in good condition but the spark plug consistently fouls with excessive carbon deposit—the need for a hotter plug is indicated.

Periodic cleaning of spark plugs by means of an efficient spark plug cleaner is often advantageous.

Spark plug gaps should be set and maintained at factory setting—pitted points should be cleaned and, if badly pitted, replaced. Incorrectly set breaker points will affect ignition timing and ignition output.

### Ignition Timing

Ignition timing is given in crankshaft degrees and is factory setting. Almost all distributors are provided with some type of adjustment enabling the ignition timing to be reset without disturbing the calibration of the distributor advance mechanism. Retarded ignition timing will eliminate or reduce detonation but will result in decreased performance and fuel economy. Also, in most cases, an ignition setting somewhat in advance of the factory setting will result in additional performance and economy, although such an ignition setting will require a fuel of higher antiknock value than the standard setting.

### Carburetors

Carburetors should not be adjusted or jets changed except by qualified mechanics. Correct fuel (or float) levels are extremely important to satisfactory performance and fuel economy—factory specifications should be strictly maintained.

## LIST OF ABBREVIATIONS

| | |
|---|---|
| AA | Aluminum Alloy (cylinder heads & pistons) |
| AC | AC Spark Plug Division, GMC |
| Adv | Advance |
| AI | Aluminum Industries (valves) |
| AL | The Electric Auto-Lite Company |
| AMA | Automobile Manufacturers Association |
| ATC | After Top Center |
| BTC | Before Top Center |
| Bmep | Brake mean effective pressure |
| ByP | By Pass (oil filter) |
| C | Cold (valve adjustment) |
| Car | Carter (carburetors) |
| Centrif | Centrifugal |
| Champ | Champion Spark Plug Company |
| Clr | Clearance |
| CNA | Chrome Nickel Alloy Iron |
| Comp Press | Compression Pressure |
| Cr Sp | Cranking Speed |
| DD | Downdraft |
| Deg | Degrees |
| Dup | Duplex |
| Eaton | Eaton Mfg. Company (valves) |
| Eng | Engine |
| Eqpt | Equipment |
| Exh | Exhaust |
| F | F-head |
| FF | Full Flow (oil filter) |
| H | Hot (valve adjustment) |
| HP | Horsepower |
| Hyp | Hypoid (rear axle gearing) |
| Hyd Lifters | Hydraulic Lifters |
| I | In-head (overhead valves) |
| Int | Intake |
| L | L-head |
| Max | Maximum |
| No. Cyl | Number of cylinders |
| OD | Overdrive |
| Recm Press | Recommended Pressure (tires) |
| Rich | Rich Manufacturing Company (valves) |
| RP | Rochester Products (carburetors) |
| RE | Replaceable Element (oil filter) |
| RU | Replaceable Unit (oil filter) |
| SB | Spiral Bevel |
| Sil | Silchrome |
| Sgl | Single |
| Std | Standard |
| Strom | Stromberg Carburetor Company |
| TDC | Top Dead Center |
| TP | Thompson Products, Inc. (valves) |
| Trans | Transmission |
| Vac | Vacuum |

## SUMMARY OF CHARACTERISTICS

### 1952 PASSENGER CARS

| | 1951 | 1952 | Change |
|---|---|---|---|
| Number of Makes | 21 | 20 | —1 |
| Number of Models | 62 | 60 | —2 |
| ENGINE CHARACTERISTICS: | | | |
| Average Standard Compression Ratio | 7.07 | 7.18 | +0.11 |
| Average Optional Higher Compression Ratio | 7.59 | 7.68 | +0.09 |
| No. of Optional Higher Compression Ratios | 18 | 11 | —7 |
| Highest Standard Compression Ratio | 8.00 | 8.00 | — |
| Lowest Standard Compression Ratio | 6.48 | 6.60 | +0.12 |
| Highest Optional Compression Ratio | 10.00 | 10.00 | — |
| Average Displacement | 247.7 | 249.5 | +1.8 |
| Average Maximum Brake Horsepower | 116.2 | 122.1 | +5.9 |
| Average RPM at Maximum Horsepower | 3745 | 3802 | +57 |
| Average Horsepower Per Cubic Inch | .471 | .489 | +0.018 |
| Average Brake Mean Effective Pressure, lb/sq in | 125.0 | 126.9 | +1.9 |
| Maximum Horsepower Per Cubic Inch | .580 | .580 | — |
| Lowest Horsepower Per Cubic Inch | .401 | .418 | +0.017 |
| Average lb/HP—5 Passenger Sedan | 30.35 | 29.45 | —0.90 |
| Rated Horsepower With Standard Compression Ratio: | | | |
| Under 75 | 5 | 3 | —2 |
| 75-99 | 14 | 12 | —2 |
| 100-149 | 30 | 30 | — |
| 150-199 | 13 | 15 | +2 |
| Piston Materials: | | | |
| Aluminum Alloy | 54 | 52 | —2 |
| Cast Iron or Steel Alloy | 8 | 8 | — |
| | 62 | 60 | |

## BUICK

| CAR MODEL | Series 40 Synchromesh | Series 40 Dynaflow |
|---|---|---|
| **ENGINE** | | |
| No. Cyl-Head Type | 8-I | 8-I |
| Bore and Stroke (in) | 3-3/16x4-1/8 | 3-3/16x4-1/8 |
| Displacement (cu in) | 263.3 | 263.3 |
| AMA Horsepower | 32.51 | 32.51 |
| Max Horsepower @ rpm | 120 @ 3600 | 128 @ 3600 |
| Max Torque, lb-ft @ rpm | 215 @ 2000 | 225 @ 2000 |
| Max bmep, lb/sq in | 123.0 | 129.0 |
| Head Material | Cast Iron | Cast Iron |
| Compression Ratio | 6.60 | 7.20 |
| Comp Press, lb/sq in @ rpm | 114 @ CR Sp | 120 @ Cr Sp |
| Piston Material | AA | AA |
| Bearing Material | Steel Backed Durex | |
| **IGNITION** | | |
| Spark Plug—Factory Eqpt | AC 46X | AC 46X |
| Alternate | Champion J-11, AL A9 | |
| Spark Plug Gap | .025" | .025" |
| Breaker Gap | .015" | .015" |
| Cam Angle | | |
| Firing Order | 1-6-2-5-8-3-7-4 | 1-6-2-5-8-3-7-4 |
| Timing—Crankshaft Degrees | 4° BTC | 4° BTC |
| Adv Deg—Centrif—Vac | 26-14 | 26-14 |
| Adv Begins—Ends—Eng rpm | 500-3350 | 500-3350 |
| **VALVES** | | |
| Make and Material—Int | TP or Eaton or Rich 3140 | |
| Exh | TP or Eaton or Rich XCR or 2112N | |
| Tappet Clr—Seat Angle—Int | .015" H, 45° | Hydraulic Lifters, 45° |
| Exh | .015" H, 45° | Hydraulic Lifters, 45° |
| Exhaust Seat Inserts | None | None |
| **CARBURETOR** | | |
| Make, Model | (1) | (1) |
| Size, Type | 1-1/8" Dual DD | 1-1/8" Dual DD |
| Float Level | (2) | (2) |
| Choke Control | Automatic | Automatic |
| **ENGINE LUBRICATION** | | |
| Oil—Summer—Winter—SAE | See Buick Instruction Book | |
| Normal Oil Press—lb @ mph | 35 @ 35 | 35 @ 35 |
| Oil Filter—Type | FF(3), RE | FF(3), RE |
| **CAPACITY** | | |
| Oil (qt) | 5-1/2 (4) | 5-1/2 (4) |
| Water (qt) | 12 (5) | 13-1/2 (5) |
| Transmission (pt) | 1-3/8 | (6) |
| Rear Axle (pt) | 3 | 3 |
| Gasoline (gal) | 19 | 19 |
| **GENERAL DATA (5 Passenger Sedan)** | | |
| Wheelbase (in) | 121-1/2 | 121-1/2 |
| Over-all Lgth Incl Bumpers (in) | 204-3/4 | 204-3/4 |
| Shipping Weight (lb) | 3665 | 3763 |
| Tire Size—Recm Press (lb) | 7.60x15-24-24 | 7.60x15-24-24 |
| Rear Axle Ratio—Type | 3.9 (7) | 3.6 (8) |

LOCATION CHASSIS SERIAL NO. Inside Left Front Windshield Pillar Post

(1) Stromberg AAUVB-267 or Carter WCD-882S.
(2) Upon removal of sight plug with engine idling, fuel level should be just high enough to wet threads at lower side of inspection hole.
(3) Oil filter full flow to rocker arms only.
(4) Add 1-1/2 quarts for dry oil filter.
(5) Add 1-1/2 quarts for heater.
(6) Dynaflow requires 8-1/2 quarts for refill—plus 1-3/4 pints if completely dry.
(7) 3.6 optional.
(8) 3.9 optional.

| CAR MODEL | Series 50 Synchromesh | Series 50 Dynaflow | Series 70 Dynaflow |
|---|---|---|---|
| **ENGINE** | | | |
| No. Cyl-Head Type | 8-I | 8-I | 8-I |
| Bore and Stroke (in) | 3-3/16x4-1/8 | 3-3/16x4-1/8 | 3-7/16x4-5/16 |
| Displacement (cu in) | 263.3 | 263.3 | 320.2 |
| AMA Horsepower | 32.51 | 32.51 | 37.81 |
| Max Horsepower @ rpm | 124 @ 3600 | 128 @ 3600 | 170 @ 3800 |
| Max Torque, lb-ft @ rpm | 220 @ 2000 | 225 @ 2000 | 280 @ 2400 |
| Max bmep, lb/sq in | 126.2 | 129.0 | 131.8 |
| Head Material | Cast Iron | Cast Iron | Cast Iron |
| Compression Ratio | 6.90 | 7.20 | 7.5 |
| Comp Press, lb/sq in @ rpm | 118 @ Cr Sp | 120 @ Cr Sp | 120 @ Cr Sp |
| Piston Material | AA | AA | AA |
| Bearing Material | | Steel Backed Durex | |
| **IGNITION** | | | |
| Spark Plug—Factory Eqpt | AC 46X | AC 46X | AC 46X |
| Alternate | | Champion J-11, AL A9 | |
| Spark Plug Gap | .025" | .025" | .025" |
| Breaker Gap | .015" | .015" | .015" |
| Cam Angle | | | |
| Firing Order | | 1-6-2-5-8-3-7-4 | |
| Timing—Crankshaft Degrees | 4° BTC | 4° BTC | 6° BTC |
| Adv Deg—Centrif—Vac | 26-14 | 26-14 | 26-14 |
| Adv Begins—Ends—Eng rpm | 500-3350 | 500-3350 | 500-3350 |
| **VALVES** | | | |
| Make and Material—Int | | TP or Eaton or Rich 3140 | |
| Exh | | TP or Eaton or Rich XCR or 2112N | |
| Tappet Clr—Seat Angle—Int | | Hydraulic Lifters, 45° | |
| Exh | | Hydraulic Lifters, 45° | |
| Exhaust Seat Inserts | None | None | None |
| **CARBURETOR** | | | |
| Make, Model | (1) | (1) | (2) |
| Size, Type | 1-1/8" Dual DD | 1-1/8" Dual DD | DD 4 Barrel |
| Float Level | (3) | (3) | (3) |
| Choke Control | Automatic | Automatic | Automatic |
| **ENGINE LUBRICATION** | | | |
| Oil—Summer—Winter—SAE | | See Buick Instruction Book | |
| Normal Oil Press—lb @ mph | 35 @ 35 | 35 @ 35 | 35 @ 35 |
| Oil Filter—Type | FF(4), RE | FF(4), RE | FF(4), RE |
| **CAPACITY** | | | |
| Oil (qt) | 5-1/2 (5) | 5-1/2 (5) | 7 (5) |
| Water (qt) | 12 (6) | 13-1/2 (6) | 18 (6) |
| Transmission (pt) | 1-3/8 | (7) | (8) |
| Rear Axle (pt) | 3 | 3 | 3 |
| Gasoline (gal) | 19 | 19 | 19 |
| **GENERAL DATA (5 Passenger Sedan)** | | | |
| Wheelbase (in) | 125-1/2 | 125-1/2 | 130-1/4 |
| Over-all Lgth Incl Bumpers (in) | 210-1/4 | 210-1/4 | 215 |
| Shipping Weight (lb) | 3825 | 3923 | 4285 |
| Tire Size—Recm Press (lb) | 7.60x15-24-24 | 7.60x15-24-24 | 8.00x15-24-24 |
| Rear Axle Ratio—Type | 4.1 (9) | 3.9 (10) | 3.6 (9) |
| LOCATION CHASSIS SERIAL NO. | Inside Left Front Windshield Pillar Post | | |

(1) Stromberg AAUVB-267 or Carter WCD-882S.
(2) Stromberg 4AUV-267 or Carter WCFB-894S.
(3) Upon removal of sight plug with engine idling, fuel level should be just high enough to wet threads at lower side of inspection hole.
(4) Oil filter full flow to rocker arms only.
(5) Add 1-1/2 quarts for dry oil filter.
(6) Add 1-1/2 quarts for heater.
(7) Dynaflow requires 8-1/2 quarts for refill—plus 1-3/4 pints if completely dry.
(8) Dynaflow requires 10 quarts for refill—plus 1-3/4 pints if completely dry.
(9) 3.9 optional.
(10) 3.6 optional.

## CADILLAC

| CAR MODEL | 62 | 60 Special | 75 |
|---|---|---|---|
| **ENGINE** | | | |
| No. Cyl-Head Type | V-8-I | V-8-I | V-8-I |
| Bore and Stroke (in) | 3-13/16x3-5/8 | 3-13/16x3-5/8 | 3-13/16x3-5/8 |
| Displacement (cu in) | 331 | 331 | 331 |
| AMA Horsepower | 46.5 | 46.5 | 46.5 |
| Max Horsepower @ rpm | 190 @ 4000 | 190 @ 4000 | 190 @ 4000 |
| Max Torque, lb-ft @ rpm | 322 @ 2400 | 322 @ 2400 | 322 @ 2400 |
| Max bmep, lb/sq in | 146.6 @ 2400 | 146.6 @ 2400 | 146.6 @ 2400 |
| Head Material | Cast Iron | Cast Iron | Cast Iron |
| Compression Ratio | 7.5 | 7.5 | 7.5 |
| Comp Press, lb/sq in @ rpm | 194 @ 1000 | 194 @ 1000 | 194 @ 1000 |
| Piston Material | AA | AA | AA |
| Bearing Material | Steel Backed Durex | | |
| **IGNITION** | | | |
| Spark Plug—Factory Eqpt | AC 48X | AC 48X | AC 48X |
| Alternate | | Champion J-11, AL A9 | |
| Spark Plug Gap | .035" | .035" | .035" |
| Breaker Gap | .010" to .015" | .010" to .015" | .010" to .015" |
| Cam Angle | 31° ± 1-1/2° | 31° ± 1-1/2° | 31° ± 1-1/2° |
| Firing Order | | 1-8-4-3-6-5-7-2 | |
| Timing—Crankshaft Degrees | 5° BTC | 5° BTC | 5° BTC |
| Adv Deg—Centrif—Vac | 32-20-1/2 | 32-20-1/2 | 32-20-1/2 |
| Adv Begins—Ends—Eng rpm | 800-3700 | 800-3700 | 800-3700 |
| **VALVES** | | | |
| Make and Material—Int | Rich 3140 | | |
| Exh | Eaton Sil X-10 or Rich 2112N | | |
| Tappet Clr—Seat Angle—Int | Hydraulic Lifters, 44° | | |
| Exh | Hydraulic Lifters, 44° | | |
| Exhaust Seat Inserts | None | None | None |
| **CARBURETOR** | | | |
| Make, Model | Carter WCFB 896S or Rochester 4GC | | |
| Size, Type | 1-1/4" DD 4 Barrel | | |
| Float Level | (1) | | |
| Choke Control | Automatic | Automatic | Automatic |
| **ENGINE LUBRICATION** | | | |
| Oil—Summer—Winter—SAE | See Cadillac Instruction Book | | |
| Normal Oil Press—lb @ mph | 30-35 @ 30 | 30-35 @ 30 | 30-35 @ 30 |
| Oil Filter—Type | None | None | None |
| **CAPACITY** | | | |
| Oil (qt) | 5 | 5 | 5 |
| Water (qt) | 19 | 19 | 19 |
| Transmission (pt) | 21 | 21 | 3-3/4 (2) |
| Rear Axle (pt) | 5 | 5 | 5 |
| Gasoline (gal) | 20 | 20 | 20 |
| **GENERAL DATA (5 Passenger Sedan)** | | | |
| Wheelbase (in) | 126 | 130 | 146-3/4 |
| Over-all Lgth Incl Bumpers. (in) | 215-1/2 (3) | 224-1/2 | 236-1/4 |
| Shipping Weight (lb) | 4125 | 4275 | 4695 (4) |
| Tire Size—Recm Press (lb) | 8.00x15-24-24 | 8.00x15-24-24 | 8.20x15-28-28 |
| Rear Axle Ratio—Type | 3.36 or 3.07 | 3.36 or 3.07 | 3.77 |

LOCATION CHASSIS SERIAL NO. Right Frame Sidebar, Behind Engine Bracket

(1) Rochester 4GC—1-3/8" from bowl cover gasket to bottom of float. Carter WCFB 896S—Distance from bowl cover to float is 1/4" at front of float, 5/16" at rear.
(2) Hydra-Matic requires 21 pints for refill, 24 pints dry.
(3) Overall length of Coupe, Coupe DeVille and Convertible is 220-1/2".
(4) Add 90 pounds when equipped with Hydra-Matic.

| CAR MODEL | Special & Deluxe Synchromesh | Deluxe Powerglide |
|---|---|---|
| **ENGINE** | | |
| No. Cyl-Head Type | 6-I | 6-I |
| Bore and Stroke (in) | 3-1/2x3-3/4 | 3-9/16x3-15/16 |
| Displacement (cu in) | 216.5 | 235.5 |
| AMA Horsepower | 29.4 | 30.4 |
| Max Horsepower @ rpm | 92 @ 3400 | 105 @ 3600 |
| Max Torque, lb-ft @ rpm | 176 @ 1000-2000 | 193 @ 2000 |
| Max bmep, lb/sq in | 122.5 | 123.8 |
| Head Material | Cast Alloy Iron | Cast Alloy Iron |
| Compression Ratio | 6.6 (1) | 6.7 (1) |
| Comp Press, lb/sq in @ rpm | 110 @ 125 (Engine hot) | |
| Piston Material | Cast Alloy Iron | Cast Alloy Iron |
| Bearing Material | Steel Backed Thin Wall Babbitt | |
| **IGNITION** | | |
| Spark Plug—Factory Eqpt | AC 46-5 | AC 46-5 |
| Alternate | (2) | (2) |
| Spark Plug Gap | .035" | .035" |
| Breaker Gap | .015" to .022" | .015" to .022" |
| Cam Angle | 39° | 39° |
| Firing Order | 1-5-3-6-2-4 | 1-5-3-6-2-4 |
| Timing—Crankshaft Degrees | 5° BTC | 5° BTC |
| Adv Deg—Centrif—Vac | 36-20 | 31-20 |
| Adv Begins—Ends—Eng rpm | 675-3450 | 600-3700 |
| **VALVES** | | |
| Make and Material—Int | Silchrome or Nickel Chrome Steel | |
| Exh | Silchrome Steel | |
| Tappet Clr—Seat Angle—Int | .006"H, 30° | Hyd Lifters, 30° |
| Exh | .013"H, 45° | Hyd Lifters, 45° |
| Exhaust Seat Inserts | None | None |
| **CARBURETOR** | | |
| Make, Model | RP 7004477 | RP 7003526 |
| Size, Type | 1-1/4" Sgl DD | 1-1/2" Sgl DD |
| Float Level | 1-9/32" (3) | 1-9/32" (3) |
| Choke Control | Manual | Automatic |
| **ENGINE LUBRICATION** | | |
| Oil—Summer—Winter—SAE | See Chevrolet Instruction Book | |
| Normal Oil Press—lb @ mph | 14 @ 39 | 14 @ 2000 |
| Oil Filter—Type | None | None |
| **CAPACITY** | | |
| Oil (qt) | 5 (refill) | 5 (refill) |
| Water (qt) | 15 | 15 |
| Transmission (pt) | 1-1/2 | 9 quarts (refill) |
| Rear Axle (pt) | 3-1/2 | 3-1/2 |
| Gasoline (gal) | 16 | 16 |
| **GENERAL DATA (5 Passenger Sedan)** | | |
| Wheelbase (in) | 115 | 115 |
| Over-all Lgth Incl Bumpers (in) | 198-1/8 | 198-1/8 |
| Shipping Weight (lb) | 3120 (Special) | 3300 |
| Tire Size—Recm Press (lb) | 6.70x15-24-24 | 6.70x15-24-24 |
| Rear Axle Ratio—Type | 4.11 Hyp | 3.55 Hyp |
| LOCATION CHASSIS SERIAL NO. | Left Front Body Hinge Pillar | |

(1) No optional compression ratio.
(2) Champion's recommendation is J-11; Auto-Lite's is A9.
(3) From cover surface to bottom of float.
(4) 3160 pounds for Deluxe.

## CHRYSLER

| CAR MODEL | Windsor C-51 | Saratoga C-55 |
|---|---|---|
| **ENGINE** | | |
| No. Cyl-Head Type | 6-L | V-8-I |
| Bore and Stroke (in) | 3-7/16x4-3/4 | 3-13/16x3-5/8 |
| Displacement (cu in) | 264.5 | 331.1 |
| AMA Horsepower | 28.36 | 46.5 |
| Max Horsepower @ rpm | 119 @ 3600 | 180 @ 4000 |
| Max Torque, lb-ft @ rpm | 218 @ 1600 | 312 @ 2000 |
| Max bmep, lb/sq in | 124.0 | 142.0 |
| Head Material | Cast Iron | Cast Iron |
| Compression Ratio | 7.0 | 7.5 |
| Comp Press, lb/sq in @ rpm | 120-150 @ 150 | 135-165 @ 150 |
| Piston Material | AA | AA — Steel Strut |
| Bearing Material | Steel Backed Lead Base Babbitt | |
| **IGNITION** | | |
| Spark Plug—Factory Eqpt | AL AR8 | AL 4S-140 |
| Alternate | AC 46, Champ J-8 | AC 46, Champ J-8 |
| Spark Plug Gap | .035" | .035" |
| Breaker Gap | .018" to .020" | .015" to .018" |
| Cam Angle | 34-1/2° to 38° | 32° to 36° (1) |
| Firing Order | 1-5-3-6-2-4 | 1-8-4-3-6-5-7-2 |
| Timing—Crankshaft Degrees | 2° BTC | 4° BTC |
| Adv Deg—Centrif—Vac | 20-18 | 22-23 |
| Adv Begins—Ends—Eng rpm | 700-2850 | 800-3550 |
| **VALVES** | | |
| Make and Material—Int | Silicon — Chromium Steel | |
| Exh | Silicon — Chromium Steel | |
| Tappet Clr—Seat Angle—Int | .008" H, 45° | Hyd Lifters, 45° |
| Exh | .010" H, 45° | Hyd Lifters, 45° |
| Exhaust Seat Inserts | Yes | Yes |
| **CARBURETOR** | | |
| Make, Model | Ball & Ball (Car) | Car WCD 830S |
| Size, Type | 1-1/2" Sgl DD | 1-1/4" Dual DD |
| Float Level | 5/64" (2) | 11/64" (3) |
| Choke Control | Automatic | Automatic |
| **ENGINE LUBRICATION** | | |
| Oil—Summer—Winter—SAE | See Chrysler Instruction Book | |
| Normal Oil Press—lb @ mph | 50 @ 45 | 60 @ 50 |
| Oil Filter—Type | FF, RE | FF, RE |
| **CAPACITY** | | |
| Oil (qt) | 5 | 5 |
| Water (qt) | 15 | 25 |
| Transmission (pt) | 2-3/4 (4, 5) | 3 (5) |
| Rear Axle (pt) | 3-1/4 | 3-1/2 |
| Gasoline (gal) | 17 | 20 |
| **GENERAL DATA (5 Passenger Sedan)** | | |
| Wheelbase (in) | 125-1/2 | 125-1/2 |
| Over-all Lgth Incl Bumpers (in) | 207-3/4 | 207-3/4 |
| Shipping Weight (lb) | 3660 (6) | 4010 |
| Tire Size—Recm Press (lb) | 7.60x15-24-24 | 8.00x15-24-24 |
| Rear Axle Ratio—Type | 3.9 Hyp (7) | 3.36, 3.54 or 3.73 Hyp (8) |
| LOCATION CHASSIS SERIAL NO. | Left Front Door Body Hinge Post | |

(1) Two-breaker point distributor; 26° to 28° dwell for each breaker.
(2) From top of float chamber to top of float.
(3) Between machined surface of float chamber cover and nearest point on float.
(4) 3 pints refill when equipped with the Fluid-Matic Drive.
(5) If equipped with torque converter, torque converter unit capacity 10-1/2 quarts.
(6) Windsor Deluxe weighs 3775 pounds.
(7) 3.9 for Fluid-Matic Drive; 3.73 for Fluid-Torque Drive.
(8) For Fluid-Matic Drive or Fluid-Torque Drive.

| CAR MODEL | New Yorker C-52 | Imperial C-54 | Crown Imperial C-53 |
|---|---|---|---|
| **ENGINE** | | | |
| No. Cyl-Head Type | V-8-I | V-8-I | V-8-I |
| Bore and Stroke (in) | 3-13/16x3-5/8 | 3-13/16x3-5/8 | 3-13/16x3-5/8 |
| Displacement (cu in) | 331.1 | 331.1 | 331.1 |
| AMA Horsepower | 46.5 | 46.5 | 46.5 |
| Max Horsepower @ rpm | 180 @ 4000 | 180 @ 4000 | 180 @ 4000 |
| Max Torque, lb-ft @ rpm | 312 @ 2000 | 312 @ 2000 | 312 @ 2000 |
| Max bmep, lb/sq in | 142.0 | 142.0 | 142.0 |
| Head Material | Cast Iron | Cast Iron | Cast Iron |
| Compression Ratio | 7.5 | 7.5 | 7.5 |
| Comp Press, lb sq in @ rpm | 135-165 @ 150 | 135-165 @ 150 | 135-165 @ 150 |
| Piston Material | AA — Steel Strut | | |
| Bearing Material | Steel Backed Lead Base Babbitt | | |
| **IGNITION** | | | |
| Spark Plug—Factory Eqpt | AL 4S-140 | AL 4S-140 | AL 4S-140 |
| Alternate | AC 46, Champ J-8 | AC 46, Champ J-8 | AC 46, Champ J-8 |
| Spark Plug Gap | .035" | .035" | .035" |
| Breaker Gap | .015" to .018" | .015" to .018" | .015" to .018" |
| Cam Angle | 32°to 36° (1) | 32°to 36° (1) | 32°to 36° (1) |
| Firing Order | | 1-8-4-3-6-5-7-2 | |
| Timing—Crankshaft Degrees | 4° BTC | 4° BTC | 4° BTC |
| Adv Deg—Centrif—Vac | 22-23 | 22-23 | 22-23 |
| Adv Begins—Ends—Eng rpm | 800-3550 | 800-3550 | 800-3550 |
| **VALVES** | | | |
| Make and Material—Int | Silicon — Chromium Steel | | |
| Exh | Silicon — Chromium Steel | | |
| Tappet Clr—Seat Angle—Int | Hyd Lifters, 45° | | |
| Exh | Hyd Lifters, 45° | | |
| Exhaust Seat Inserts | Yes | Yes | Yes |
| **CARBURETOR** | | | |
| Make, Model | Car WCD 830S | Car WCD 830S | Car WCD 830S |
| Size, Type | 1-1/4" Dual DD | 1-1/4" Dual DD | 1-1/4" Dual DD |
| Float Level | 11/64" (2) | 11/64" (2) | 11/64" (2) |
| Choke Control | Automatic | Automatic | Automatic |
| **ENGINE LUBRICATION** | | | |
| Oil—Summer—Winter—SAE | See Chrysler Instruction Book | | |
| Normal Oil Press lb @ mph | 60 @ 50 | 60 @ 50 | 60 @ 50 |
| Oil Filter—Type | FF, RE | FF, RE | FF, RE |
| **CAPACITY** | | | |
| Oil (qt) | 5 | 5 | 5 |
| Water (qt) | 25 | 25 | 25 |
| Transmission (pt) | 3 (3) | 3 (3) | 3 (4) |
| Rear Axle (pt) | 3-1/2 | 3-1/2 | 3-1/2 |
| Gasoline (gal) | 20 | 20 | 20 |
| **GENERAL DATA (5 Passenger Sedan)** | | | |
| Wheelbase (in) | 131-1/2 | 131-1/2 | 145-1/2 |
| Over-all Lgth Incl Bumpers (in) | 213-3/4 | 213-1/8 | 230 |
| Shipping Weight (lb) | 4205 | 4315 | 5360 |
| Tire Size—Recm Press (lb) | 8.20x15-24-24 | | 8.00x15-24-24 |
| Rear Axle Ratio—Type | 3.36, 3.54 or 3.73 Hyp (5) | | 3.54 Hyp |
| LOCATION CHASSIS SERIAL NO. | Left Front Door Body Hinge Post | | |

(1) Two-breaker distributor: 26° to 28° dwell for each breaker.
(2) Between machined surface of float chamber cover and nearest point on float.
(3) If equipped with torque converter, torque converter unit capacity 10-1/2 quarts.
(4) Torque converter capacity 10-1/2 quarts.
(5) For Fluid-Matic or Fluid-Torque Drive.

## CROSLEY

| CAR MODEL | CD | Hotshot & Super Sports—VC |
|---|---|---|
| **ENGINE** | | |
| No. Cyl-Head Type | 4-I | 4-I |
| Bore and Stroke (in) | 2-1/2x2-1/4 | 2-1/2x2-1/4 |
| Displacement (cu in) | 44 | 44 |
| AMA Horsepower | 10 | 10 |
| Max Horsepower @ rpm | 25.5 @ 5200 | 25.5 @ 5200 |
| Max Torque, lb-ft @ rpm | 32.5 @ 3000 | 32.5 @ 3000 |
| Max bmep, lb/sq in | 111.4 | 111.4 |
| Head Material | Cast Iron | Cast Iron |
| Compression Ratio | 8.0 | 8.0 (1) |
| Comp Press, lb/sq in @ rpm | 125-135 @ 260 | 125-135 @ 260 |
| Piston Material | AA | AA |
| Bearing Material | Steel Backed Babbitt | |
| **IGNITION** | | |
| Spark Plug—Factory Eqpt | Champion J-8 | Champion J-8 |
| Alternate | AL A7, AC 45 | AL A7, AC 45 |
| Spark Plug Gap | .025" | .025" |
| Breaker Gap | .020" | .020" |
| Cam Angle | 46° | 46° |
| Firing Order | 1-3-4-2 | 1-3-4-2 |
| Timing—Crankshaft Degrees | 12° BTC | 12° BTC |
| Adv Deg—Centrif—Vac | 34-0 | 34-0 |
| Adv Begins—Ends—Eng rpm | 800-3000 | 800-3000 |
| **VALVES** | | |
| Make and Material Int | 3140 | 3140 |
| Exh | 2112N | 2112N |
| Tappet Clr—Seat Angle Int | .004"-.006" C, 45° | .004"-.006" C, 45° |
| Exh | .007"-.009" C, 45° | .007"-.009" C, 45° |
| Exhaust Seat Inserts | None | None |
| **CARBURETOR** | | |
| Make, Model | Carter WO-870S | Carter WO-870S |
| Size, Type | 1" Sgl DD | 1" Sgl DD |
| Float Level | 1/2" (2) | 1/2" (2) |
| Choke Control | Manual | Manual |
| **ENGINE LUBRICATION** | | |
| Oil—Summer—Winter—SAE | See Crosley Instruction Book | |
| Normal Oil Press—lb @ mph | 35-50 @ 30 | 35-50 @ 30 |
| Oil Filter—Type | ByP, RU | ByP, RU |
| **CAPACITY** | | |
| Oil (qt) | 2 (3) | 2 (3) |
| Water (qt) | 4 | 4 |
| Transmission (pt) | 1 | 1 |
| Rear Axle (pt) | 1-1/2 | 1-1/2 |
| Gasoline (gal) | 6-1/2 | 6-1/2 |
| **GENERAL DATA (4 Passenger Sedan)** | | |
| Wheelbase (in) | 80 | 85 |
| Over-all Lgth Incl Bumpers (in) | 148 | 137 |
| Shipping Weight (lb) | 1400 | 1270 |
| Tire Size—Recm Press (lb) | 4.50x12-25-25 | 4.50x12-25-25 |
| Rear Axle Ratio—Type | 5.17SB | 5.17SB |
| LOCATION CHASSIS SERIAL NO. | Left Center Firewall Under Hood | |

(1) 10.0 to 1 compression ratio optional.
(2) From bowl cover to top of float—with cover inverted and needle seated.
(3) 3 quarts with oil filter.

| CAR MODEL | S-15 | S-17 |
|---|---|---|
| **ENGINE** | | |
| No. Cyl-Head Type | 6-L | V-8-I |
| Bore and Stroke (in) | 3-7/16x4-1/2 | 3-5/8x3-11/32 |
| Displacement (cu in) | 250.6 | 276.1 |
| AMA Horsepower | 28.36 | 42.05 |
| Max Horsepower @ rpm | 116 @ 3600 | 160 @ 4400 |
| Max Torque, lb-ft @ rpm | 208 @ 1600 | 250 @ 2000 |
| Max bmep, lb/sq in | 125.1 | 136.5 |
| Head Material | Cast Iron | Cast Iron |
| Compression Ratio | 7.0 | 7.1 |
| Comp Press, lb sq in @ rpm | 120-150 @ 150 | 135-165 @ 150 |
| Piston Material | AA | AA Steel Band |
| Bearing Material | Steel Backed Lead Base Babbitt | |
| **IGNITION** | | |
| Spark Plug—Factory Eqpt | AL AR8 | AL 4S-140 |
| Alternate | AC 46, Champ J-8 | AC 46, Champ J-8 |
| Spark Plug Gap | .035" | .035" |
| Breaker Gap | .020" | .017" |
| Cam Angle | 34-1/2° to 38° | 32° to 36° (1) |
| Firing Order | 1-5-3-6-2-4 | 1-8-4-3-6-5-7-2 |
| Timing—Crankshaft Degrees | 2° BTC | 4° BTC |
| Adv Deg—Centrif—Vac | 20-18 | 28-23 |
| Adv Begins—Ends—Eng rpm | 700-2850 | 700-3800 |
| **VALVES** | | |
| Make and Material—Int | Silicon — Chromium Steel | |
| Exh | Silicon — Chromium Steel | |
| Tappet Clr—Seat Angle—Int | .008" H, 45° | Hyd Lifters, 45° |
| Exh | .010" H, 45° | Hyd Lifters, 45° |
| Exhaust Seat Inserts | Yes | Yes |
| **CARBURETOR** | | |
| Make, Model | Ball & Ball (Car) | Car WCD 884-SA |
| Size, Type | 1-1/2" Sgl DD | 1-1/4" Dual DD |
| Float Level | 5/64" (2) | 11/64" (3) |
| Choke Control | Automatic | Automatic |
| **ENGINE LUBRICATION** | | |
| Oil—Summer—Winter—SAE | See DeSoto Instruction Book | |
| Normal Oil Press—lb @ mph | 50 @ 45 | 50 @ 45 |
| Oil Filter—Type | ByP, RU | (4) RE |
| **CAPACITY** | | |
| Oil (qt) | 5 | 5 |
| Water (qt) | 15 | 22 |
| Transmission (pt) | 2-3/4 (5) | 2-3/4 (5) |
| Rear Axle (pt) | 3-1/4 | 3-1/2 |
| Gasoline (gal) | 17 | 17 |
| **GENERAL DATA (5 Passenger Sedan)** | | |
| Wheelbase (in) | 125-1/2 | 125-1/2 |
| Over-all Lgth Incl Bumpers (in) | 208-3/8 | 208-3/8 |
| Shipping Weight (lb) | 3550 Deluxe (6) | 3760 |
| Tire Size—Recm Press (lb) | 7.60x15-24-24 | 7.60x15-24-24 |
| Rear Axle Ratio—Type | 3.54, 3.73 or 3.9 (7) | 3.54 or 3.73 (8) |
| LOCATION CHASSIS SERIAL NO. Left Front Door Body Hinge Post | | |

(1) Two-breaker distributor: 26° to 28° for each breaker.
(2) From top of float chamber without gasket to top center of float.
(3) Between machined surface of float chamber cover and nearest point on float.
(4) Oil filter is shunt type with full flow filter optional at extra cost.
(5) 3 pints refill with Tip-Toe Shift hydraulic transmission. 3-1/2 pints refill with overdrive. Torque converter on V-8 requires 10-1/2 quarts.
(6) Custom model weighs 3660.
(7) 4.1 with overdrive, 3.73 or 3.9 with Tip-Toe Shift.
(8) 3.36, 3.54, 3.73, 3.91 or 4.1 with overdrive; 3.73 or 3.91 with Tip-Toe Shift with Fluid Drive; 3.36, 3.54 or 3.73 with Tip-Toe Shift with Fluid-Torque Drive.

## DODGE

| CAR MODEL | Dodge D-41 | Dodge D-42 |
|---|---|---|
| **ENGINE** | | |
| No. Cyl-Head Type | 6-L | 6-L |
| Bore and Stroke (in) | 3-1/4x4-5/8 | 3-1/4x4-5/8 |
| Displacement (cu in) | 230.2 | 230.2 |
| AMA Horsepower | 25.35 | 25.35 |
| Max Horsepower @ rpm | 103 @ 3600 | 103 @ 3600 |
| Max Torque, lb-ft @ rpm | 190 @ 1200 | 190 @ 1200 |
| Max bmep, lb/sq in | 127.5 | 127.5 |
| Head Material | Cast Iron | Cast Iron |
| Compression Ratio | 7.0 | 7.0 |
| Comp Press, lb/sq in @ rpm | 120-150 @ 150 | 120-150 @ 150 |
| Piston Material | AA | AA |
| Bearing Material | Steel Backed Lead Base Babbitt | |
| **IGNITION** | | |
| Spark Plug—Factory Eqpt | AL AR8 | AL AR8 |
| Alternate | AC 46, Champ J-8 | AC 46, Champ J-8 |
| Spark Plug Gap | .035" | .035" |
| Breaker Gap | .020" | .020" |
| Cam Angle | 34-1/2° to 38° | 34-1/2° to 38° |
| Firing Order | 1-5-3-6-2-4 | 1-5-3-6-2-4 |
| Timing—Crankshaft Degrees | 2° BTC | 2° BTC |
| Adv Deg—Centrif—Vac | 20-16 | 20-16 |
| Adv Begins—Ends—Eng rpm | 700-2850 | 700-2850 |
| **VALVES** | | |
| Make and Material—Int | Various Alloy Steels | |
| Exh | Silicon — Chromium Steel | |
| Tappet Clr—Seat Angle—Int | .008" H, 45° | .008" H, 45° |
| Exh | .010" H, 45° | .010" H, 45° |
| Exhaust Seat Inserts | Yes | Yes |
| **CARBURETOR** | | |
| Make, Model | Stromberg BXVD-3-93 | |
| Size, Type | 1-1/2" Sgl DD (Special) | |
| Float Level | 1/8" (1) | 1/8" (1) |
| Choke Control | Automatic | Automatic |
| **ENGINE LUBRICATION** | | |
| Oil—Summer—Winter—SAE | See Dodge Instruction Book | |
| Normal Oil Press—lb @ mph | 45 @ 45 | 45 @ 45 |
| Oil Filter—Type | ByP, RE | ByP, RE |
| **CAPACITY** | | |
| Oil (qt) | 5 | 5 |
| Water (qt) | 14 | 14 |
| Transmission (pt) | 2-3/4 (2) | 2-3/4 (2) |
| Rear Axle (pt) | 3-1/4 | 3-1/4 |
| Gasoline (gal) | 17 | 17 |
| **GENERAL DATA (5 Passenger Sedan)** | | |
| Wheelbase (in) | 115 | 123-1/2 |
| Over-all Lgth Incl Bumpers (in) | 199-7/8 | 206-7/8 |
| Shipping Weight (lb) | 3189 (3) | 3387 |
| Tire Size—Recm Press (lb) | 6.70x15-24-24 | 7.10x15-24-24 |
| Rear Axle Ratio—Type | 3.9 Hyp | 3.9 Hyp |
| LOCATION CHASSIS SERIAL NO. | Left Front Door Body Hinge Post | |

(1) From top of float chamber without gasket to top center of float.
(2) 3 pints refill when equipped with "Gyromatic" transmission.
(3) Weight given for two-door sedan; four-door sedan not available in this model.

| CAR MODEL | Mainline Customline Crestline Six | Mainline Customline Crestline Eight |
|---|---|---|
| **ENGINE** | | |
| No. Cyl-Head Type | 6-I | V-8-L |
| Bore and Stroke (in) | 3.56x3.6 | 3-3/16x3-3/4 |
| Displacement (cu in) | 215.3 | 239.4 |
| AMA Horsepower | 30.4 | 32.5 |
| Max Horsepower @ rpm | 101 @ 3500 | 110 @ 3800 |
| Max Torque, lb-ft @ rpm | 185 @ 1300-1700 | 196 @ 1900-2100 |
| Max bmep, lb/sq in | 129.5 | 123.5 |
| Head Material | Cast Iron | Cast Iron |
| Compression Ratio | 7.0 | 7.2 |
| Comp Press, lb/sq in @ rpm | 128 @ 210 | (1) |
| Piston Material | AA | AA |
| Bearing Material | Steel Backed Copper-Lead Alloy | |
| **IGNITION** | | |
| Spark Plug—Factory Eqpt | Champion H-10 | Champion H-10 |
| Alternate | AC 45L, AL AL7 | AC 45L, AL AL7 |
| Spark Plug Gap | .029" to .032" | .029" to .032" |
| Breaker Gap | .024" to .026" | .014" to .016" |
| Cam Angle | 35° to 38° | 26° to 28.5° |
| Firing Order | 1-5-3-6-2-4 | 1-5-4-8-6-3-7-2 |
| Timing—Crankshaft Degrees | TDC | 2° BTC |
| Adv Deg—Centrif—Vac | (2) | (3) |
| Adv Begins—Ends—Eng rpm | | |
| **VALVES** | | |
| Make and Material, Int | Ford or Eaton Sil ±1 | |
| Exh | Ford or Eaton Nichrome Alloy | |
| Tappet Clr—Seat Angle, Int | .015" H, 45° | .013" to .015" C, 45° |
| Exh | .015" H, 45° | .017" to .019" C, 45° |
| Exhaust Seat Inserts | None | None |
| **CARBURETOR** | | |
| Make, Model | Holley 1904-F | Holley-Ford AA1 |
| Size, Type | 1-1 4" Sgl DD | 1" Dual DD |
| Float Level | 1.322" to 1.353" (4) | 1.322" to 1.353" (4) |
| Choke Control | Manual | Manual |
| **ENGINE LUBRICATION** | | |
| Oil—Summer—Winter—SAE | See Ford Instruction Book | |
| Normal Oil Press—lb @ mph | 40-50 @ 30-40 | 40 @ 30-40 |
| Oil Filter—Type | FF, RE | ByP, RE |
| **CAPACITY** | | |
| Oil (qt) | (5) | (5) |
| Water (qt) | 15 | 22 |
| Transmission (pt) | 3 (6) | 3 (6) |
| Rear Axle (pt) | 3-1/2 | 3-1/2 |
| Gasoline (gal) | 17 | 17 |
| **GENERAL DATA** (5 Passenger Sedan) | | |
| Wheelbase (in) | 115 | 115 |
| Over-all Lgth Incl Bumpers (in) | 197.8 | 197.8 |
| Shipping Weight (lb) | 3130 | 3204 |
| Tire Size—Recm Press (lb) | 6.00x16-28-25 (7) | 6.00x16-28-25 (7) |
| Rear Axle Ratio—Type | 3.90 Hyp (8) | 3.90 Hyp (8) |
| LOCATION CHASSIS SERIAL NO. | Right Front Door Pillar Post | |

(1) 125 @ 220 with standard transmission, 116 @ 135 with Fordomatic.
(2) Full vacuum actuated distributor — maximum advance with wide open throttle at 4000 rpm is 29° to 31½° — at cruising torque maximum advance is 30½° to 33½°. (3) Full vacuum actuated distributor — maximum advance with wide open throttle at 4000 rpm is 20° to 22½° — at cruising torque maximum advance is 24° to 27°.
(4) From bowl cover flange to bottom of float in closed position.
(5) 5 quarts dry including filter—4 quarts refill.
(6) 4½ pints when equipped with overdrive—Fordomatic requires 9.75 quarts.
(7) 6.70x15-26-23 standard on Customline and Crestline—7.10x15-24-21 standard on Victoria Sunliner.
(8) 4.10 with overdrive—3.31 with Fordomatic transmission.

## HUDSON

| CAR MODEL | Pacemaker 4-B | Wasp 5-B | Commodore Six 6-B |
|---|---|---|---|
| **ENGINE** | | | |
| No. Cyl-Head Type | 6-L | 6-L | 6-L |
| Bore and Stroke (in) | 3-9/16x3-7/8 | 3-9/16x4-3/8 | 3-9/16x4-3/8 |
| Displacement (cu in) | 232 | 262 | 262 |
| AMA Horsepower | 30.4 | 30.4 | 30.4 |
| Max Horsepower @ rpm | 112 @ 4000 | 127 @ 4000 | 127 @ 4000 |
| Max Torque, lb-ft @ rpm | 175 @ 1600 | 200 @ 1600 | 200 @ 1600 |
| Max bmep, lb/sq in | 113.8 | 115.0 | 115.0 |
| Head Material | Cast Iron | Cast Iron | Cast Iron |
| Compression Ratio | 6.7 (1) | 6.7 (1) | 6.7 (1) |
| Comp Press, lb/sq in @ rpm | 119 @ 125 | 119 @ 125 | 119 @ 125 |
| Piston Material | AA | AA | AA |
| Bearing Material | Steel Backed Babbitt | | |
| **IGNITION** | | | |
| Spark Plug—Factory Eqpt | Champion H-8 | Champion H-8 | Champion H-8 |
| Alternate | AC [illegible] AL | AC 45L, AL AL7 | AC 45L, AL AL7 |
| Spark Plug Gap | .03[illegible] | .032" | .032" |
| Breaker Gap | .020" | .020" | .020" |
| Cam Angle | 39° | 39° | 39° |
| Firing Order | | 1-5-3-6-2-4 | |
| Timing—Crankshaft Degrees | TDC | TDC | TDC |
| Adv Deg—Centrif—Vac | 20-10 | 18-8 | 18-8 |
| Adv Begins—Ends—Eng rpm | 600-2400 | 1000-4000 | 1000-4000 |
| **VALVES** | | | |
| Make and Material—Int | | Eaton SAE 8645 | |
| Exh | | Eaton 2112 | |
| Tappet Clr—Seat Angle—Int | | .008" H, 45° | |
| Exh | | .010" H, 45° | |
| Exhaust Seat Inserts | None | None | None |
| **CARBURETOR** | | | |
| Make, Model | Car WA1-749S | Car WGD-776S | Car WGD-776S |
| Size, Type | 1-1/2" Sgl DD | 1-1/4" Dual DD | 1-1/4" Dual DD |
| Float Level | 1/2" (2) | 3/16" (3) | 3/16" (3) |
| Choke Control | Automatic | Automatic | Automatic |
| **ENGINE LUBRICATION** | | | |
| Oil—Summer—Winter—SAE | See Hudson Instruction Book | | |
| Normal Oil Press lb @ mph | 40 @ 30 | 40 @ 30 | 40 @ 30 |
| Oil Filter—Type | None | None | None |
| **CAPACITY** | | | |
| Oil (qt) | 7 (4) | 7 (4) | 7 (4) |
| Water (qt) | 18-1/2 (5) | 18-1/2 (5) | 18-1/2 (5) |
| Transmission (pt) | 2 (6) | 2 (6) | 2 (6) |
| Rear Axle (pt) | 3-1/2 | 3-1/2 | 3-1/2 |
| Gasoline (gal) | 20 | 20 | 20 |
| **GENERAL DATA (5 Passenger Sedan)** | | | |
| Wheelbase (in) | 119 | 119 | 124 |
| Over-all Lgth Incl Bumpers (in) | 201-1/2 | 202-1/2 | 208-1/2 |
| Shipping Weight (lb) | 3390 | 3485 | 3595 |
| Tire Size—Recm Press (lb) | 7.10x15-26-24 (7) | 7.10x15-26-24 (7) | 7.10x15-26-24 (7) |
| Rear Axle Ratio—Type | 4.1 (8) | 4.1 (8) | 4.1 (8) |
| LOCATION CHASSIS SERIAL NO. | Right Front Pillar Post | | |

(1) 7.2 optional.
(2) From projection on bowl cover to soldered seam of float—with cover inverted and needle seated.
(3) From bowl cover to top of float—with cover inverted and needle seated.
(4) 7½ quarts for dry engine.
(5) Add 1 quart when equipped with heater.
(6) 3¼ pints when equipped with overdrive. Hydra-Matic requires 11 quarts for refill.
(7) 7.60x15-26-24 optional.
(8) 4.55 optional. 4.55 standard with overdrive. 3.58 with Hydra-Matic.

| CAR MODEL | Hornet 7-B | Commodore Eight 8-B |
|---|---|---|
| **ENGINE** | | |
| No. Cyl-Head Type | 6-L | 8-L |
| Bore and Stroke (in) | 3-13/16x4-1/2 | 3x4-1/2 |
| Displacement (cu in) | 308 | 254 |
| AMA Horsepower | 34.88 | 28.8 |
| Max Horsepower @ rpm | 145 @ 3800 | 128 @ 4200 |
| Max Torque, lb-ft @ rpm | 257 @ 1800 | 198 @ 1600 |
| Max bmep, lb/sq in | 125.8 | 117.6 |
| Head Material | Cast Iron | Cast Iron |
| Compression Ratio | 7.2 (1) | 6.7 (2) |
| Comp Press, lb/sq in @ rpm | | 119 @ 125 |
| Piston Material | AA | AA |
| Bearing Material | Steel Backed Babbitt | Bronze Backed Babbitt |
| **IGNITION** | | |
| Spark Plug—Factory Eqpt | Champion H-11 | Champion H-8 |
| Alternate | AC 45L, AL AL7 | AC 45L, AL AL7 |
| Spark Plug Gap | .032" | .032" |
| Breaker Gap | .020" | .017" |
| Cam Angle | 39° | 27° |
| Firing Order | 1-5-3-6-2-4 | 1-6-2-5-8-3-7-4 |
| Timing—Crankshaft Degrees | TDC | TDC |
| Adv Deg—Centrif—Vac | 18-8 | 35-8 |
| Adv Begins—Ends—Eng rpm | 1000-4000 | 600-3400 |
| **VALVES** | | |
| Make and Material—Int | Eaton SAE 8645 | Eaton SAE 8645 |
| Exh | Eaton 2112 | Eaton Sil XB |
| Tappet Clr—Seat Angle—Int | .008" H, 45° | .008" H, 45° |
| Exh | .010" H, 45° | .010" H, 45° |
| Exhaust Seat Inserts | None | None |
| **CARBURETOR** | | |
| Make, Model | Car WGD 776S | Car WGD 773S |
| Size, Type | 1-1/4" Dual DD | 1-1/4" Dual DD |
| Float Level | 3/16" (3) | 3/16" (3) |
| Choke Control | Automatic | Automatic |
| **ENGINE LUBRICATION** | | |
| Oil—Summer—Winter—SAE | See Hudson Instruction Book | |
| Normal Oil Press—lb @ mph | 40 @ 30 | |
| Oil Filter—Type | None | None |
| **CAPACITY** | | |
| Oil (qt) | 7 (4) | 7 (5) |
| Water (qt) | 18-1/2 (6) | 18-1/2 (6) |
| Transmission (pt) | 2 (7) | 2 (7) |
| Rear Axle (pt) | 3-1/2 | 3-1/2 |
| Gasoline (gal) | 20 | 20 |
| **GENERAL DATA (5 Passenger Sedan)** | | |
| Wheelbase (in) | 124 | 124 |
| Over-all Lgth Incl Bumpers (in) | 208-1/2 | 208-1/2 |
| Shipping Weight (lb) | 3600 | 3630 |
| Tire Size—Recm Press (lb) | 7.10x15-26-24 (8) | 7.10x15-26-24 (8) |
| Rear Axle Ratio—Type | 4.1 (9) | 4.1 (9) |
| LOCATION CHASSIS SERIAL NO. | Right Front Pillar Post | |

(1) 6.7 optional.
(2) 7.2 optional.
(3) From bowl cover to top of float—with cover inverted and needle seated.
(4) 7½ quarts with dry engine.
(5) 8 quarts with dry engine.
(6) Add 1 quart when equipped with heater.
(7) 3¼ pints with overdrive. Hydra-Matic requires 11 quarts for refill.
(8) 7.60x15-26-24 optional.
(9) 4.55 optional. 4.55 standard with overdrive. 3.58 with Hydra-Matic.

| | | A<br>Extremely Hot | B<br>Very Hot | C<br>Hot | D<br>Warm |
|---|---|---|---|---|---|
| AC | 10 mm | M8 | | 106 | |
| | 14 mm | 48<br>48X | 47 Com | 46-5 46X 46<br>46 Com | 45 45L Com*<br>45 Com 45L* |
| | 18 mm | 88<br>88L Com* | 87S Com<br>87 Com | 86<br>86 Com | 85 Com<br>85S Com |
| | ⅞" | 78L Com*<br>78 78S | 77 Com 77L Com* | 76 76S | 75 Com |
| CHAMPION | 10 mm | Y-8 | | Y-6 | |
| | 14 mm | J-14 | J-12 | J-11<br>H-11* | J-8<br>H-10* |
| | 18 mm | 9 Com* | C-15 C-7 | 8 Com | 7<br>15A |
| | ⅞" | 3 Com*<br>22 | 2 Com L* | C-4 6 | |
| AUTOLITE | 10 mm | P6<br>PR6 | | | |
| | 14 mm | A11<br>AR10 | | A9 AR8 A7 AN7<br>ARL8* AL7* | |
| | 18 mm | B-11 BR10 | | B9 B7<br>BR8 | |
| | ⅞" | T11 | | T9 | T7 |
| FIRESTONE | 10 mm | T-60-F | | | |
| | 14 mm | F-120-F | | F-80-F F-90-LF* | |
| | 18 mm | M-120-CF | | M-80-CF | |
| | ⅞" | S-120-CF | | S-80-CF | |

**TORQUE WRENCH CHART**

Always use a spark plug socket wrench or a torque wrench. These wrenches are readily obtainable and are the only kind which will avoid distortion of the plug and insure the insulator against damage or breakage.

*Long reach.

## RANGE COMPARISONS

| E<br>Cool | F<br>Cold | G<br>Very Cold | H<br>Extremely Cold | | |
|---|---|---|---|---|---|
| 104 Com<br>104 | | 103 Com | | 10 mm | AC |
| 44-5 44 Com<br>44-5 Com 44 | 43L*<br>43L Com* | 43 Com 42-5 Com 42 Com | | 14 mm | |
| 84 83S Com<br>83 Com | 82 82 Com<br>82S Com | | 81S Com | 18 mm | |
| | 74 74 Com | 73 Com | | ⅞" | |
| Y-4A | | | | 10 mm | CHAMPION |
| J-7 | | J-6 J-5<br>H-9* H-8* | J-2 | 14 mm | |
| 13<br>6 Com | 5 Com | R-7 R-1 | R-11 R-2 | 18 mm | |
| 1 Com | 0 Com | | | ⅞" | |
| | P4<br>PR4 | | | 10 mm | AUTOLITE |
| | | A5 AR5 AN5<br>AL5* ARL5* | AR4 A3 | 14 mm | |
| B7 | B5 BR4 | | | 18 mm | |
| T7 | | | | ⅞" | |
| | T-40-F | | | 10 mm | FIRESTONE |
| F-40-F | F-50-LF* | | F-30-F | 14 mm | |
| M-80-CF | M-40-CF | | | 18 mm | |
| | S-40-CF | | | ⅞" | |

### TORQUE WRENCH CHART

Average torque wrench pressures recommended for standard plugs in vehicles. All pressures listed are based on spark plug and engine threads being clean.

| Plug Thread | Cast Iron Heads | Aluminum Heads |
|---|---|---|
| 10 mm | 14 lb-ft | 12 lb-ft |
| 14 mm | 30 lb-ft | 28 lb-ft |
| 18 mm | 34 lb-ft | 32 lb-ft |
| ⅞" | 37 lb-ft | 35 lb-ft |

## HENRY J

| CAR MODEL | K-523 | K-524 |
|---|---|---|
| **ENGINE** | | |
| No. Cyl-Head Type | 4-L | 6-L |
| Bore and Stroke (in) | 3-1/8x4-3/8 | 3-1/8x3-1/2 |
| Displacement (cu in) | 134.2 | 161 |
| AMA Horsepower | 15.63 | 23.44 |
| Max Horsepower @ rpm | 68 @ 4000 | 80 @ 3800 |
| Max Torque, lb-ft @ rpm | 109 @ 1800 | 133 @ 1600 |
| Max bmep, lb/sq in | 122.5 | 124.6 |
| Head Material | Cast Iron | Cast Iron |
| Compression Ratio | 7.00 | 7.00 |
| Comp Press, lb/sq in @ rpm | 120 to 130 | 130 to 140 |
| Piston Material | AA | AA |
| Bearing Material | Steel Backed Babbitt | |
| **IGNITION** | | |
| Spark Plug—Factory Eqpt | AL AN7 | AL AN7 |
| Alternate | | AC 45, Champion J-8 |
| Spark Plug Gap | .030" | .030" |
| Breaker Gap | .020" | .020" |
| Cam Angle | 41° ± 1° | 38° ± 1° |
| Firing Order | 1-3-4-2 | 1-5-3-6-2-4 |
| Timing—Crankshaft Degrees | 5° BTC | TDC |
| Adv Deg—Centrif—Vac | 22-20 | 24-12 |
| Adv Begins—Ends—Eng rpm | 700-3000 | 700-3000 |
| **VALVES** | | |
| Make and Material—Int | Various 3140 | Various 3140 |
| Exh | | 2112 or 2155 |
| Tappet Clr—Seat Angle—Int | .016" C. 45° | .016" C. 45° |
| Exh | .016" C. 45° | .016" C. 45° |
| Exhaust Seat Inserts | None | None |
| **CARBURETOR** | | |
| Make, Model | Car 820-SB | Car 833-SB |
| Size, Type | 1-1/4" Sgl DD | 1-1/4" Sgl DD |
| Float Level | 9/32" (1) | 9/32" (1) |
| Choke Control | Manual | Manual |
| **ENGINE LUBRICATION** | | |
| Oil—Summer—Winter—SAE | See Henry J Instruction Book | |
| Normal Oil Press—lb @ mph | 30-35 @ 30-40 | 30-35 @ 30-40 |
| Oil Filter—Type | None | None |
| **CAPACITY** | | |
| Oil (qt) | 4 | 5 |
| Water (qt) | 10-1/2 (2) | 9-1/2 (2) |
| Transmission (pt) | 1-1/2 (3) | 1-1/2 (3) |
| Rear Axle (pt) | 2-1/2 | 2-1/2 |
| Gasoline (gal) | 13 | 13 |
| **GENERAL DATA** (5 Passenger Sedan) | | |
| Wheelbase (in) | 100 | 100 |
| Over-all Lgth Incl Bumpers (in) | 174-1/2 (4) | 174-1/2 (4) |
| Shipping Weight (lb) | 2385 (5) | 2405 (5) |
| Tire Size—Recm Press (lb) | 5.90x15-24-20 | 5.90x15-24-20 |
| Rear Axle Ratio—Type | 4.55 | 4.10 (6) |
| **LOCATION CHASSIS SERIAL NO** | Left Front Pillar Post | |

(1) From top of float to bottom surface of float bowl cover.
(2) One quart additional if equipped with a heater.
(3) 3/4 pint additional when equipped with overdrive.
(4) 181-1/4 over-all with Continental tire cover.
(5) Add 20 pounds when equipped with Continental tire carrier. Add 40 pounds with overdrive.
(6) 4.55 when equipped with overdrive.

| CAR MODEL | Kaiser K-521 and K-522 |
|---|---|
| **ENGINE** | |
| No. Cyl-Head Type | 6-L |
| Bore and Stroke (in) | 3-5/16x4-3/8 |
| Displacement (cu in) | 226.2 |
| AMA Horsepower | 26.3 |
| Max Horsepower @ rpm | 115 @ 3650 |
| Max Torque, lb-ft @ rpm | 190 @ 1800 |
| Max bmep, lb/sq in | 126.7 |
| Head Material | Cast Iron |
| Compression Ratio | 7.3 |
| Comp Press, lb/sq in @ rpm | 120 @ 70 |
| Piston Material | AA |
| Bearing Material | Steel Backed Babbitt |
| **IGNITION** | |
| Spark Plug—Factory Eqpt | AL A7 |
| Alternate | AC 45, Champ J-8 |
| Spark Plug Gap | .030" |
| Breaker Gap | .022" |
| Cam Angle | 31° to 35° |
| Firing Order | 1-5-3-6-2-4 |
| Timing—Crankshaft Degrees | 4° BTC |
| Adv Deg—Centrif—Vac | 18-10 |
| Adv Begins—Ends—Eng rpm | 650-3200 |
| **VALVES** | |
| Make and Material—Int | TP or Eaton or Rich 8645 |
| Exh | TP or Eaton or Rich XCR |
| Tappet Clr—Seat Angle—Int | .014" C, 30° |
| Exh | .014" C, 45° |
| Exhaust Seat Inserts | None |
| **CARBURETOR** | |
| Make, Model | Car WGD-7818 |
| Size, Type | 1-1/4" Dual DD |
| Float Level | 1/4" (1) |
| Choke Control | Automatic |
| **ENGINE LUBRICATION** | |
| Oil—Summer—Winter—SAE | See Kaiser Instruction Book |
| Normal Oil Press—lb @ mph | 35 @ 30 |
| Oil Filter—Type | ByP. RU |
| **CAPACITY** | |
| Oil (qt) | 5 (2) |
| Water (qt) | 12 (3) |
| Transmission (pt) | 2-1/2 (4) |
| Rear Axle (pt) | 3-1/2 |
| Gasoline (gal) | 17 |
| **GENERAL DATA (5 Passenger Sedan)** | |
| Wheelbase (in) | 118-1/2 |
| Over-all Lgth Incl Bumpers (in) | 214-3/4 (5) |
| Shipping Weight (lb) | 3210 (6) |
| Tire Size—Recm Press (lb) | 6.70x15-24-24 |
| Rear Axle Ratio—Type | 3.91 and 4.09 (7) |
| LOCATION CHASSIS SERIAL NO. | Left Front Pillar Post |

(1) From top of float to bottom of float bowl cover—float cover inverted.
(2) 5 quarts refill—6 quarts with new filter.
(3) Without heater. One quart additional with heater.
(4) 3½ pints with overdrive. When equipped with Hydra-Matic, 11 quarts required for refill, 12 quarts when unit is dry.
(5) Deluxe is 216⅝ inches over-all.
(6) Deluxe weighs 3240 pounds. Add 115 pounds for Hydra-Matic, 40 pounds for overdrive.
(7) 4.55 with overdrive. 3.54 with Hydra-Matic.

| LINCOLN-MERCURY<br>CAR MODEL | Lincoln<br>Cosmopolitan<br>and Capri | Mercury<br>Custom and<br>Monterey |
|---|---|---|
| **ENGINE** | | |
| No. Cyl-Head Type | V-8-I | V-8-L |
| Bore and Stroke (in) | 3.8x3.5 | 3-3/16x4 |
| Displacement (cu in) | 317.5 | 255 4 |
| AMA Horsepower | 46.2 | 32 5 |
| Max Horsepower @ rpm | 160 @ 3900 | 125 @ 3700 |
| Max Torque, lb-ft @ rpm | 284 @ 1800 | 211 @ 1900-2200 |
| Max bmep, lb/sq in | 134 9 | 124.5 |
| Head Material | Cast Iron | Cast Iron |
| Compression Ratio | 7.5 | 7.2 |
| Comp Press, lb/sq in @ rpm | Min 115 @ 120 | 105-125 @ 120 |
| Piston Material | AA-Steel Strut | AA-Steel Strut |
| Bearing Material | Steel Backed Copper-Lead Alloy | |
| **IGNITION** | | |
| Spark Plug—Factory Eqpt | Champion H-10 | Champion H-10 |
| Alternate | AC 45L, AL AL7 | AC 45L, AL AL7 |
| Spark Plug Gap | .029" to .032" | .029" to .032" |
| Breaker Gap | .014" to .016" | .014" to .016" |
| Cam Angle | 26° to 28.5° | 26° to 28.5° |
| Firing Order | 1-5-4-8-6-3-7-2 | 1-5-4-8-6-3-7-2 |
| Timing—Crankshaft Degrees | 3° BTC | 2° BTC |
| Adv Deg—Centrif—Vac | (1) | (2) |
| Adv Begins—Ends—Eng rpm | | |
| **VALVES** | | |
| Make and Material—Int | Rich or Eaton<br>3140 or 8645<br>Ford | Ford, Eaton or<br>Rich Sil ±1<br>Ford, Eaton or |
| Exh | Nichrome Alloy | Rich Nichrome Alloy |
| Tappet Clr—Seat Angle—Int | Hyd Lifters, 45° | .013" to .015" C, 45° |
| Exh | Hyd Lifters, 45° | .017" to .019" C, 45° |
| Exhaust Seat Inserts | None | None |
| **CARBURETOR** | | |
| Make, Model | Holley 1901 FFC | Holley 1901 FFC |
| Size, Type | 1-1/4" Dual DD | 1-1/4" Dual DD |
| Float Level | 1/2" ± 1/32" (3) | 1/2" ± 1/32" (3) |
| Choke Control | Automatic | Automatic |
| **ENGINE LUBRICATION** | | |
| Oil—Summer—Winter—SAE | See Lincoln-Mercury Instruction Book | |
| Normal Oil Press—lb @ mph | 40 @ 40 | 57 @ 40 |
| Oil Filter—Type | FF, RE | ByP, RE |
| **CAPACITY** | | |
| Oil (qt) | (4) | (5) |
| Water (qt) | 20.5 | 22 |
| Transmission (pt) | 3-1/2 (6) | 3 (7) |
| Rear Axle (pt) | 4.0 | 3-1/2 |
| Gasoline (gal) | 21.0 | 19.5 |
| **GENERAL DATA (5 Passenger Sedan)** | | |
| Wheelbase (in) | 123 | 118 |
| Over-all Lgth Incl Bumpers (in) | 214.1 | 202.2 |
| Shipping Weight (lb) | 3883 | 3391 |
| Tire Size—Recm Press (lb) | 8.00x15-24-24(8) | 7.10x15-26-22 |
| Rear Axle Ratio—Type | 3.92 Hyp (9) | 3.73 Hyp (10) |
| LOCATION CHASSIS SERIAL NO. | Right Front Door Pillar Post | |

(1) Full vacuum actuated distributor — maximum advance with wide open throttle at 4000 rpm is 29½° to 32° — at cruising torque maximum is 32½° to 35½°. (2) Full vacuum actuated distributor — maximum advance with wide open throttle at 4000 rpm is 15° to 17° — at cruising torque maximum is 18° to 21°. (3) From bowl cover flange to fuel level. (4) 6 quarts dry including filter — 5 quarts refill. (5) 5 quarts dry including filter — 4 quarts refill. (6) 4½ pints with overdrive. Hydra-Matic requires 12 quarts. (7) 4½ pints with overdrive. Merc-O-Matic requires 9.75 quarts. (8) 8.20x15-24-24 standard on Capri. (9) 4.27 optional. 3.92 or 4.27 with overdrive. 3.15 on first 2000 Hydra-Matics produced. 3.07 on remainder. 3.31 optional with Hydra-Matic drive. (10) 4.10 with overdrive. 3.31 with Merc-O-Matic transmission.

| CAR MODEL | Rambler 5210 | Statesman 5240 | Ambassador 5260 |
|---|---|---|---|
| **ENGINE** | | | |
| No. Cyl-Head Type | 6-L | 6-L | 6-I |
| Bore and Stroke (in) | 3-1/8x3-3/4 | 3-1/8x4-1/4 | 3-1/2x4-3/8 |
| Displacement (cu in) | 172.6 | 195.6 | 252.6 |
| AMA Horsepower | 23.44 | 23.44 | 29.4 |
| Max Horsepower @ rpm | 82 @ 3800 | 88 @ 3800 | 120 @ 3700 |
| Max Torque, lb-ft @ rpm | 138 @ 1600 | 150 @ 1600 | 220 @ 1600 |
| Max bmep, lb/sq in | 120.6 | 115.5 | 131.4 |
| Head Material | Cast Iron | Cast Iron | Cast Iron |
| Compression Ratio | 7.25 (1) | 7.0 (2) | 7.3 (3) |
| Comp Press, lb sq in @ rpm | 120 | 120 | 130 |
| Piston Material | AA | AA | AA |
| Bearing Material | Steel Backed Babbitt | | |
| **IGNITION** | | | |
| Spark Plug—Factory Eqpt | AL A7A | AL A7A | AL A7A |
| Alternate | AC 45, Champ J-8 | | AC 44, Champ J-8 |
| Spark Plug Gap | .030" | .030" | .030" |
| Breaker Gap | .022" | .022" | .022" |
| Cam Angle | 31° to 37° | 31° to 37° | 31° to 37° |
| Firing Order | 1-5-3-6-2-4 | 1-5-3-6-2-4 | 1-5-3-6-2-4 |
| Timing—Crankshaft Degrees | TDC | TDC | TDC |
| Adv Deg—Centrif—Vac | 22-17 | 22-17 | 28-12 |
| Adv Begins—Ends—Eng rpm | 600-2800 | 600-2800 | 600-2700 |
| **VALVES** | | | |
| Make and Material—Int | SAE 3150 or Mod 8645 | | |
| Exh | 2112N | 2112N | 2112N |
| Tappet Clr—Seat Angle—Int | .016" C, 45° | .015" H, 45° | .015" H, 30° |
| Exh | .018" C, 45° | .015" H, 45° | .018" H, 45° |
| Exhaust Seat Inserts | None | None | None |
| **CARBURETOR** | | | |
| Make, Model | Carter YF | Carter YF | Carter HF |
| Size, Type | 1-1/4" Sgl DD | 1-1/4" Sgl DD | Sgl DD |
| Float Level | 1/2" (4) | 1/2" (4) | NA |
| Choke Control | Automatic | Automatic | Automatic |
| **ENGINE LUBRICATION** | | | |
| Oil—Summer—Winter—SAE | See Nash Instruction Book | | |
| Normal Oil Press—lb @ mph | 50 @ 30 | 50 @ 30 | 50 @ 30 |
| Oil Filter—Type | None | None | None |
| **CAPACITY** | | | |
| Oil (qt) | 5 | 5 | 6 |
| Water (qt) | 12 (5) | 15 (5) | 18 (5) |
| Transmission (pt) | 1-1/2 (6) | 2-1/4 (6) (7) | 2-1/4 (6) (7) |
| Rear Axle (pt) | 3 | 3 | 4 |
| Gasoline (gal) | 20 | 20 | 20 |
| **GENERAL DATA (5 Passenger Sedan)** | | | |
| Wheelbase (in) | 100 | 114-1/4 | 121-1/4 |
| Over-all Lgth Incl Bumpers (in) | 176 | 202-1/4 | 209-1/4 |
| Shipping Weight (lb) | 2420 (8) | 3040 | 3480 |
| Tire Size—Recm Press (lb) | 5.90x15-24-24 (9) | 6.70x15-24-24 | 7.10x15-24-24 |
| Rear Axle Ratio—Type | 3.77 Hyp (10) | 4.4 Hyp (11) | 4.10 Hyp (12) |
| LOCATION CHASSIS SERIAL NO. Under Hood on Dash Panel | | | |

(1) 7.6 optional.
(2) 7.35 optional.
(3) 8.25 aluminum head optional with dual carburetors.
(4) From top of float (at free end) to float chamber cover flange.
(5) With heater.
(6) 1-1/4 pints additional with overdrive.
(7) 11 quarts refill with Hydra-Matic Drive.
(8) Weight of two-door hard top given.
(9) 6.40x15-24-24 used on Custom.
(10) 4.4 optional; 4.4 standard with overdrive, 4.1 optional.
(11) 4.1 optional; 4.9 standard with overdrive, 4.4 optional; 3.3 with Hydra-Matic Drive.
(12) 4.4 standard with overdrive, 4.1 optional; 3.15 with Hydra-Matic Drive.

## OLDSMOBILE

| CAR MODEL | Deluxe 88 | Super 88 | 98 |
|---|---|---|---|
| **ENGINE** | | | |
| No. Cyl-Head Type | V-8-I | V-8-I | V-8-I |
| Bore and Stroke (in) | 3-3/4x3-7/16 | 3-3/4x3-7/16 | 3-3/4x3-7/16 |
| Displacement (cu in) | 303.7 | 303.7 | 303.7 |
| AMA Horsepower | 45.0 | 45.0 | 45.0 |
| Max Horsepower @ rpm | 145 @ 3600 | 160 @ 3600 | 160 @ 3600 |
| Max Torque, lb-ft @ rpm | 280 @ 1800 | 283 @ 1800 | 283 @ 1800 |
| Max bmep, lb/sq in | 139.0 | 140.5 | 140.5 |
| Head Material | Cast Iron | Cast Iron | Cast Iron |
| Compression Ratio | 7.5 | 7.5 | 7.5 |
| Comp Press, lb sq in @ rpm | 180-190 @ 1000 | 180-190 @ 1000 | 180-190 @ 1000 |
| Piston Material | AA — Steel Strut | | |
| Bearing Material | Steel Backed Durex | | |
| **IGNITION** | | | |
| Spark Plug—Factory Eqpt | AC 46-5 | AC 46-5 | AC 46-5 |
| Alternate | | Champion J-11, AL A9 | |
| Spark Plug Gap | .030" | .030" | .030" |
| Breaker Gap | .016" | .016" | .016" |
| Cam Angle | 26° to 33° | 26° to 33° | 26° to 33° |
| Firing Order | | 1-8-7-3-6-5-4-2 | |
| Timing—Crankshaft Degrees | 2-1/2° BTC | 2-1/2° BTC | 2-1/2° BTC |
| Adv Deg—Centrif—Vac | 30-20 | 30-20 | 30-20 |
| Adv Begins—Ends—Eng rpm | 600-3000 | 600-3000 | 600-3000 |
| **VALVES** | | | |
| Make and Material—Int | Various 3140 and SAE 8645 | | |
| Exh | SII XCR | | |
| Tappet Clr—Seat Angle—Int | Hydraulic Lifters, 45° | | |
| Exh | Hydraulic Lifters, 45° | | |
| Exhaust Seat Inserts | None | None | None |
| **CARBURETOR** | | | |
| Make, Model | Carter WGD RP4GC or Car WCFB | | |
| Size, Type | 1-7/16" Dual DD | 1-5/16" DD | 4 Barrel |
| Float Level | 1/4" (1) | (2) | (2) |
| Choke Control | Automatic | Automatic | Automatic |
| **ENGINE LUBRICATION** | | | |
| Oil—Summer—Winter—SAE | See Oldsmobile Instruction Book | | |
| Normal Oil Press—lb @ mph | 40 @ 30 | 40 @ 30 | 40 @ 30 |
| Oil Filter—Type | FF, RE (3) | FF, RE (3) | FF, RE (3) |
| **CAPACITY** | | | |
| Oil (qt) | 5 | 5 | 5 |
| Water (qt) | 21-1/2 | 21-1/2 | 21-1/2 |
| Transmission (pt) | 2 (4) | 2 (4) | 2 (4) |
| Rear Axle (pt) | 3-3/4 | 3-3/4 | 3-3/4 |
| Gasoline (gal) | 18 | 18 | 18 |
| **GENERAL DATA** (5 Passenger Sedan) | | | |
| Wheelbase (in) | 120 | 120 | 124 |
| Over-all Lgth Incl Bumpers (in) | 204 | 204 | 213 |
| Shipping Weight (lb) | 3607 (5) | 3651 (5) | 3763 (5) |
| Tire Size—Recm Press (lb) | 7.60x15-24-22 | 7.60x15-24-22 | 7.60x15-24-22 |
| Rear Axle Ratio—Type | 3.64 (6) | 3.64 (6) | 3.64 (7) |
| **LOCATION CHASSIS SERIAL NO.** Left Front Door Pillar Post | | | |

(1) From flange of cover to top of float.
(2) Rochester 1-3/8" from cover gasket to bottom of float with bowl cover inverted and needle seated. Carter 5/16" from machined face of cover to top of float with bowl cover inverted and needle seated.
(3) Oil filter factory installed at extra cost.
(4) Hydra-Matic requires 10-1/2 quarts for refill.
(5) Add 100 pounds for Hydra-Matic.
(6) 3.9 optional. 3.23 standard with Hydra-Matic. 3.03 optional.
(7) 3.9 optional. 3.42 standard with Hydra-Matic. 3.08 optional.

| CAR MODEL | 200 Synchromesh & Ultramatic | 250 & 300 Synchromesh & Ultramatic | 400 Ultramatic |
|---|---|---|---|
| **ENGINE** | | | |
| No. Cyl-Head Type | 8-L | 8-L | 8-L |
| Bore and Stroke (in) | 3-1/2x3-3/4 | 3-1/2x4-1/4 | 3-1/2x4-1/4 |
| Displacement (cu in) | 288 | 327 | 327 |
| AMA Horsepower | 39.2 | 39.2 | 39.2 |
| Max Horsepower @ rpm | 135 @ 3600 (1) | 150 @ 3600 (2) | 155 @ 3600 |
| Max Torque, lb-ft @ rpm | 230 @ 2000 (1) | 270 @ 2000(2) | 275 @ 2000 |
| Max bmep, lb/sq in | 120.4 (1) | 124.5 (2) | 126.8 |
| Head Material | Cast Iron | Cast Iron | Cast Iron |
| Compression Ratio | 7.00 (1) | 7.00 (2) | 7.80 |
| Comp Press, lb/sq in @ rpm | | | |
| Piston Material | AA | AA | AA |
| Bearing Material | | Steel Backed Durex | |
| **IGNITION** | | | |
| Spark Plug—Factory Eqpt | AL A5 or AC 46-5 or Champion J-8 | | |
| Alternate | | | |
| Spark Plug Gap | .025" | .025" | .025" |
| Breaker Gap | .016" | .016" | .017" |
| Cam Angle | 21° to 30° | 21° to 30° | 27° |
| Firing Order | | 1-6-2-5-8-3-7-4 | |
| Timing—Crankshaft Degrees | 6° BTC | 6° BTC | 6° BTC |
| Adv Deg—Centrif—Vac | 16°-21° | 16°-21° | 16°-21° |
| Adv Begins—Ends—Eng rpm | 600-3200 | 600-3200 | 600-3200 |
| **VALVES** | | | |
| Make and Material—Int | SAE 8645 | SAE 8645 | SAE 8645 |
| Exh | 2112 | 2112 | 2112 |
| Tappet Clr—Seat Angle—Int | .007" H, 30° | Hydraulic Lifters, 30° | |
| Exh | .010" H, 45° | Hydraulic Lifters, 45° | |
| Exhaust Seat Inserts | None | None | None |
| **CARBURETOR** | | | |
| Make, Model | Car WGD-784S | Car WGD-928S | |
| Size, Type | 1-1/4" Dup DD | 1-1/4" Dup DD | 1-1/4" Dup DD |
| Float Level | 13/64" (3) | 13/64" (3) | 13/64" (3) |
| Choke Control | Automatic | Automatic | Automatic |
| **ENGINE LUBRICATION** | | | |
| Oil—Summer—Winter—SAE | See Packard Instruction Book | | |
| Normal Oil Press—lb @ mph | 40 | 40 | 40 |
| Oil Filter—Type | None | ByP, RE | ByP, RE |
| **CAPACITY** | | | |
| Oil (qt) | 7 | 7 | 7 |
| Water (qt) | 20 (4) | 20 (4) | 20 (4) |
| Transmission (pt) | 2 (5) | 2 (5) | 24 |
| Rear Axle (pt) | 4 | 4 | 4 |
| Gasoline (gal) | 20 | 20 | 20 |
| **GENERAL DATA (5 Passenger Sedan)** | | | |
| Wheelbase (in) | 122 | 127 (6) | 127 |
| Over-all Lgth Incl Bumpers (in) | 212-3/4 | 217-3/4 (6) | 217-3/4 |
| Shipping Weight (lb) | 3680 (7) | 3880 (7) | 4100 |
| Tire Size—Recm Press (lb) | 7.60x15-24-24 | 8.00x15-24-24 | 8.00x15-24-24 |
| Rear Axle Ratio—Type | 3.9 (8) | 3.9 (8) | 3.54 |
| **LOCATION CHASSIS SERIAL NO.** Left Front Door Pillar Post | | | |

(1) With Ultramatic drive, cylinder head of 7.5 compression ratio is used. Maximum HP is increased to 138; maximum torque to 235; maximum bmep to 123.0.

(2) With Ultramatic drive, cylinder head of 7.8 compression ratio is used. Maximum HP is increased to 155; maximum torque to 275; maximum bmep to 126.8

(3) Below top of bowl.

(4) One pint additional with heater.

(5) 1-1/4 pints additional for overdrive. Ultramatic drive requires 24 pints.

(6) Series 250 has 122 inch wheelbase — over-all length 212-3/4.

(7) 150 pounds additional with Ultramatic drive.

(8) 4.1 with overdrive, 3.54 with Ultramatic drive.

## PLYMOUTH

| CAR MODEL | Concord P-22 | Cambridge P-23 | Cranbrook P-23 |
|---|---|---|---|
| **ENGINE** | | | |
| No. Cyl-Head Type | 6-L | 6-L | 6-L |
| Bore and Stroke (in) | 3-1/4x4-3/8 | 3-1/4x4-3/8 | 3-1/4x4-3/8 |
| Displacement (cu in) | 217.8 | 217.8 | 217.8 |
| AMA Horsepower | 25.35 | 25.35 | 25.35 |
| Max Horsepower @ rpm | 97 @ 3600 | 97 @ 3600 | 97 @ 3600 |
| Max Torque, lb-ft @ rpm | 175 @ 1200 | 175 @ 1200 | 175 @ 1200 |
| Max bmep, lb/sq in | 121.2 | 121.2 | 121.2 |
| Head Material | Cast Iron | Cast Iron | Cast Iron |
| Compression Ratio | 7.0 | 7.0 | 7.0 |
| Comp Press, lb/sq in @ rpm | 120-150 @ 150 | 120-150 @ 150 | 120-150 @ 150 |
| Piston Material | AA | AA | AA |
| Bearing Material | Steel Backed Lead Base Babbitt | | |
| **IGNITION** | | | |
| Spark Plug—Factory Eqpt | AL AR8 | AL AR8 | AL AR8 |
| Alternate | AC 46, Champ J-8 | AC 46, Champ J-8 | AC 46, Champ J-8 |
| Spark Plug Gap | .035" | .035" | .035" |
| Breaker Gap | .020" | .020" | .020" |
| Cam Angle | 34-1/2° to 38° | 34-1/2° to 38° | 34-1/2° to 38° |
| Firing Order | 1-5-3-6-2-4 | 1-5-3-6-2-4 | 1-5-3-6-2-4 |
| Timing—Crankshaft Degrees | 2° BTC | 2° BTC | 2° BTC |
| Adv Deg—Centrif—Vac | 20-16 | 20-16 | 20-16 |
| Adv Begins—Ends—Eng rpm | 700-2850 | 700-2850 | 700-2850 |
| **VALVES** | | | |
| Make and Material—Int | Various Alloy Steels | | |
| Exh | Silicon — Chromium Steel | | |
| Tappet Clr—Seat Angle—Int | .010" H, 45° | .010" H, 45° | .010" H, 45° |
| Exh | .010" H, 45° | .010" H, 45° | .010" H, 45° |
| Exhaust Seat Inserts | Yes | Yes | Yes |
| **CARBURETOR** | | | |
| Make, Model | Ball & Ball (Carter) 1-1/2" Sgl DD (Special) | | |
| Size, Type | | | |
| Float Level | 5/64" (1) | 5/64" (1) | 5/64" (1) |
| Choke Control | Automatic | Automatic | Automatic |
| **ENGINE LUBRICATION** | | | |
| Oil—Summer—Winter—SAE | See Plymouth Instruction Book | | |
| Normal Oil Press—lb @ mph | 45 @ 45 | 45 @ 45 | 45 @ 45 |
| Oil Filter—Type | None | ByP. RU | ByP. RU |
| **CAPACITY** | | | |
| Oil (qt) | 5 | 5 | 5 |
| Water (qt) | 13 | 13 | 13 |
| Transmission (pt) | 2-3/4 | 2-3/4 | 2-3/4 |
| Rear Axle (pt) | 3-1/4 | 3-1/4 | 3-1/4 |
| Gasoline (gal) | 17 | 17 | 17 |
| **GENERAL DATA (5 Passenger Sedan)** | | | |
| Wheelbase (in) | 111 | 118-1/2 | 118-1/2 |
| Over-all Lgth Incl Bumpers (in) | 188-1/8 | 193-7/8 | 193-7/8 |
| Shipping Weight (lb) | 2969 (2) | 3104 | 3109 |
| Tire Size—Recm Press (lb) | 6.40x15-24-24 | (3) 6.70x15-24-24 | 6.70x15-24-24 |
| Rear Axle Ratio—Type | 3.73 Hyp (4) | 3.9 Hyp (5) | 3.9 Hyp (5) |
| LOCATION CHASSIS SERIAL NO. | Left Front Door Body Hinge Post | | |

(1) From top of float chamber without gasket to top of float.
(2) Weight of two-door sedan; four-door sedan not available in this model.
(3) Suburban and Savoy use 6.70x15-24-24.
(4) 4.1 on two-door and coupe when equipped with overdrive; 4.3 on suburban and Savoy.
(5) 4.3 with overdrive.

| CAR MODEL | 25 Chieftain 6 | 27 Chieftain 8 |
|---|---|---|
| **ENGINE** | | |
| No. Cyl-Head Type | 6-L | 8-L |
| Bore and Stroke (in) | 3-9/16x4 | 3-3/8x3-3/4 |
| Displacement (cu in) | 239.2 | 268.4 |
| AMA Horsepower | 30.4 | 36.4 |
| Max Horsepower @ rpm | 102 @ 3400 (1) | 122 @ 3600 (1) |
| Max Torque, lb-ft @ rpm | 194 @ 1400 (1) | 227 @ 2200 (1) |
| Max bmep, lb/sq in | 122.1 (1) | 127.5 (1) |
| Head Material | Cast Iron | Cast Iron |
| Compression Ratio | 7.7 (1) | 7.7 (1) |
| Comp Press, lb/sq in @ rpm | 123-141 @ Cr Sp | 123-141 @ Cr Sp |
| Piston Material | CNA | CNA |
| Bearing Material | Steel Backed Babbitt | |
| **IGNITION** | | |
| Spark Plug—Factory Eqpt | AC 44-5 | AC 44-5 |
| Alternate | AL A7, Champ J-8 | AL A7, Champ J-8 |
| Spark Plug Gap | .025" | .025" |
| Breaker Gap | .022" | .016" |
| Cam Angle | 35° | 26° |
| Firing Order | 1-5-3-6-2-4 | 1-6-2-5-8-3-7-4 |
| Timing—Crankshaft Degrees | (2) | (2) |
| Adv Deg—Centrif—Vac | 26-17 | 22-22 |
| Adv Begins—Ends—Eng rpm | 600-4100 | 500-3760 |
| **VALVES** | | |
| Make and Material—Int | Rich V Steel | Rich V Steel |
| Exh | Rich 2112 or TP SiI XB | |
| Tappet Clr—Seat Angle—Int | .011" H, 30° | .011" H, 30° |
| Exh | .013" H, 45° | .013" H, 45° |
| Exhaust Seat Inserts | None | None |
| **CARBURETOR** | | |
| Make, Model | RP BC | Car WCD-719-SA (3) |
| Size, Type | 1-5/16" Sgl DD | 1-3/16" Dual DD |
| Float Level | 1-17/64" (4) | 3/16" (5) |
| Choke Control | Automatic | Automatic |
| **ENGINE LUBRICATION** | | |
| Oil—Summer—Winter—SAE | See Pontiac Instruction Book | |
| Normal Oil Press—lb @ mph | 35-40 @ 40 | 35-40 @ 40 |
| Oil Filter—Type | None | None |
| **CAPACITY** | | |
| Oil (qt) | 5 | 5 |
| Water (qt) | 18 | 19-1/2 |
| Transmission (pt) | 1-3/4 (6) | 1-3/4 (6) |
| Rear Axle (pt) | 3-1/4 | 3-1/4 |
| Gasoline (gal) | 17-1/2 | 17-1/2 |
| **GENERAL DATA (5 Passenger Sedan)** | | |
| Wheelbase (in) | 120 | 120 |
| Over-all Lgth Incl Bumpers (in) | 202-1/2 | 202-1/2 |
| Shipping Weight (lb) | 3278 (7) | 3378 (7) |
| Tire Size—Recm Press (lb) | 7.10x15-24-24 (8) | 7.10x15-24-24 (8) |
| Rear Axle Ratio—Type | 4.1 Hyp (9) | 3.9 Hyp (9) |
| **LOCATION CHASSIS SERIAL NO.** | Left Front Pillar Post | |

(1) 7.7 compression ratio standard with all Hydra-Matic equipped cars; 6.8 compression ratio standard with conventional transmission with 7.7 optional. Power data given for 7.7 compression ratio.
(2) Factory setting is 6° BTC for 6.8 compression ratio, 3° BTC for 7.7 compression ratio.
(3) WCD-720-SA used with Hydra-Matic drive.
(4) Bowl cover gasket to bottom of float using Kent-Moore Gauge J-4554.
(5) Bowl cover to seam of float by use of Carter Gauge T-109-162.
(6) Hydra-Matic drive requires approximately 11 quarts.
(7) 125 pounds additional when equipped with Hydra-Matic drive.
(8) 7.60x15 tires optional.
(9) 3.08 with Hydra-Matic drive.

## STUDEBAKER

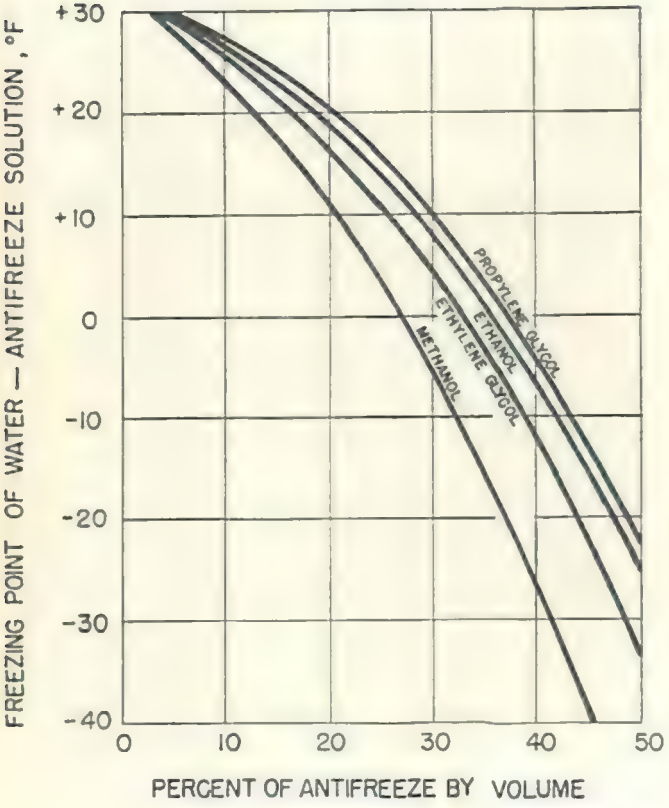
| CAR MODEL | Champion 12G | Commander 3H | Land Cruiser 3H |
|---|---|---|---|
| **ENGINE** | | | |
| No. Cyl-Head Type | 6-L | V-8-I | V-8-I |
| Bore and Stroke (in) | 3x4 | 3-3/8x3-1/4 | 3-3/8x3-1/4 |
| Displacement (cu in) | 169.6 | 232.6 | 232.6 |
| AMA Horsepower | 21.6 | 36.4 | 36.4 |
| Max Horsepower @ rpm | 85 @ 4000 | 120 @ 4000 | 120 @ 4000 |
| Max Torque, lb-ft @ rpm | 138 @ 2400 | 190 @ 2000 | 190 @ 2000 |
| Max bmep, lb/sq in | 122.8 | 127.5 | 127.5 |
| Head Material | Cast Iron | Cast Iron | Cast Iron |
| Compression Ratio | 7.0 (1) | 7.0 (1) | 7.0 (1) |
| Comp Press, lb/sq in @ rpm | 120 @ 150 | 120-140 @ 150 | 120-140 @ 150 |
| Piston Material | AA | AA | AA |
| Bearing Material | Steel Backed Babbitt | | |
| **IGNITION** | | | |
| Spark Plug—Factory Eqpt | Champion J-7 | Champion H-8 | Champion H-8 |
| Alternate | AC 44, AL A5 | AC 45L, AL AL5 | AC 45L, AL AL5 |
| Spark Plug Gap | .025" | .035" | .035" |
| Breaker Gap | .020" | .013" to .018" | .013" to .018" |
| Cam Angle | 38° to 40° | 22° to 29° | 22° to 29° |
| Firing Order | 1-5-3-6-2-4 | 1-8-4-3-6-5-7-2 | |
| Timing—Crankshaft Degrees | 2° BTC | 8° BTC | 8° BTC |
| Adv Deg—Centrif—Vac | 14-18 | 28-16 | 28-16 |
| Adv Begins—Ends—Eng rpm | 800-2800 | 600-2900 | 600-2900 |
| **VALVES** | | | |
| Make and Material | Int Rich or Eaton Chrome Nickel Steel | | |
| | Exh 2112 | 2112N | 2112N |
| Tappet Clr—Seat Angle | Int .016" C, 45° | .014" to .016" C, 45° | |
| | Exh .016" C, 45° | .014" to .016" C, 45° | |
| Exhaust Seat Inserts | None | None | None |
| **CARBURETOR** | | | |
| Make, Model | Car WE 715S | Strom AAUVB-26 | |
| Size, Type | 1-1/4" Sgl DD | 1-1/8" Dual DD | |
| Float Level | 3/8" (2) | 1/8" to 5/32" (3) | |
| Choke Control | Automatic | Automatic | Automatic |
| **ENGINE LUBRICATION** | | | |
| Oil—Summer—Winter—SAE | See Studebaker Instruction Book | | |
| Normal Oil Press—lb @ mph | 20-40 @ 40 | 20-40 @ 40 | 20-40 @ 40 |
| Oil Filter—Type | None (4) | None (4) | ByP, RE |
| **CAPACITY** | | | |
| Oil (qt) | 5 | 6 | 6 |
| Water (qt) | 10 | 17-1/4 | 17-1/4 |
| Transmission (pt) | 1.6 (5) | 2.4 (5) | 2.4 (5) |
| Rear Axle (pt) | 2-1/2 | 3 | 3 |
| Gasoline (gal) | 18 | 18 | 18 |
| **GENERAL DATA (5 Passenger Sedan)** | | | |
| Wheelbase (in) | 115 | 115 | 119 |
| Over-all Lgth Incl Bumpers (in) | 197-9/16 | 197-9/16 | 201-9/16 |
| Shipping Weight (lb) | 2695 (6) | 3085 (7) | 3155 |
| Tire Size—Recm Press (lb) | 6.40x15-26-24 | 7.10x15-26-22 | 7.10x15-26-22 |
| Rear Axle Ratio—Type | 4.10 Hyp (8) | 4.09 Hyp (9) | 4.09 Hyp (9) |
| LOCATION CHASSIS SERIAL NO. | Left Front Door Lock Pillar Post | | |

(1) 7.5 optional.
(2) Between boss on bowl cover and far edge of float seam.
(3) See Studebaker instruction book.
(4) By-pass replaceable element oil filter optional equipment on Champion and Commander.
(5) 2.75 with overdrive on Champion, 3.4 with overdrive on V-8's. Automatic transmission requires 9-1/2 quarts.
(6) Deluxe 2720, Regal 2725. Add 40 pounds for overdrive, 105 pounds for Automatic drive.
(7) State 3075. Add 40 pounds for overdrive, 80 pounds for Automatic drive.
(8) 4.56 with overdrive; 4.10 with Automatic drive.
(9) 4.55 with overdrive; 3.54 with Automatic drive.

| CAR MODEL | 6-75 | 6-85 |
|---|---|---|
| **ENGINE** | | |
| No. Cyl-Head Type | 6-L | 6-F |
| Bore and Stroke (in) | 3-1/8x3-1/2 | 3-1/8x3-1/2 |
| Displacement (cu in) | 161.1 | 161.1 |
| AMA Horsepower | 23.44 | 23.44 |
| Max Horsepower @ rpm | 75 @ 4000 | 90 @ 4200 |
| Max Torque, lb-ft @ rpm | 124 @ 2000 | 135 @ 1600 |
| Max bmep, lb/sq in | 116.1 | 126.4 |
| Head Material | Cast Iron | Cast Iron |
| Compression Ratio | 6.9 | 7.6 |
| Comp Press, lb/sq in @ rpm | 125 @ 185 | 135 @ 185 |
| Piston Material | AA | AA |
| Bearing Material | Steel Backed Babbitt Lined | |
| **IGNITION** | | |
| Spark Plug—Factory Eqpt | Champion J-8 | Champion J-8 |
| Alternate | AC 44, AL A7 | AC 44, AL A7 |
| Spark Plug Gap | .030" | .030" |
| Breaker Gap | .020" | .020" |
| Cam Angle | 39° | 39° |
| Firing Order | 1-5-3-6-2-4 | 1-5-3-6-2-4 |
| Timing—Crankshaft Degrees | TDC | TDC |
| Adv Deg—Centrif—Vac | 24-12 | 19-12 |
| Adv Begins—Ends—Eng rpm | 700-3000 | 600-2600 |
| **VALVES** | | |
| Make and Material—Int | 3140 | 3140 |
| Exh | | 2112 or 2155 |
| Tappet Clr—Seat Angle—Int | .016" C, 45° | .018" C, 45° |
| Exh | .016" C, 45° | .016" C, 45° |
| Exhaust Seat Inserts | None | None |
| **CARBURETOR** | | |
| Make, Model | Car YF-937S | Car YF-924S |
| Size, Type | 1-1/4" Sgl DD | 1-1/4" Sgl DD |
| Float Level | 9/32" (1) | 9/32" (1) |
| Choke Control | Manual | Manual |
| **ENGINE LUBRICATION** | | |
| Oil—Summer—Winter—SAE | See Willys Instruction Book | |
| Normal Oil Press—lb @ mph | 35 @ 30 | 35 @ 30 |
| Oil Filter—Type | None (2) | None (2) |
| **CAPACITY** | | |
| Oil (qt) | 5 | 5 |
| Water (qt) | 11 | 11 |
| Transmission (pt) | 1-1/2 (3) | 1-1/2 (3) |
| Rear Axle (pt) | 2 | 2 |
| Gasoline (gal) | 18 | 18 |
| **GENERAL DATA (5 Passenger Sedan)** | | |
| Wheelbase (in) | 108 | 108 |
| Over-all Lgth Incl Bumpers (in) | 181 | 181 |
| Shipping Weight (lb) | 2487 | 2571 |
| Tire Size—Recm Press (lb) | 5.90x15-24-24 | 5.90x15-24-24 (4) |
| Rear Axle Ratio—Type | 4.1 Hyp | 4.1 Hyp (5) |
| LOCATION CHASSIS SERIAL NO. | Left Front Door Pillar | |

(1) From top of float to bottom surface of float bowl cover without gasket.
(2) By-pass replaceable element oil filter optional.
(3) 3/4 pint additional with overdrive.
(4) 6.40x15-24-24 optional.
(5) 4.56 with overdrive; 3.85 available on special order.

## FREEZING POINTS OF WATER-ANTIFREEZE SOLUTIONS



# APPROXIMATE ANALYSIS OF VALVE, VALVE FACING AND SEAT INSERT MATERIALS IN GENERAL USE

## EXHAUST VALVE STEELS

| ELEMENT | SIL 1 [1] | SIL XB [1] | XCR [2] | XCR MOD. [2] | 2112* [1] | SIL 10 [1] | SIL X-142 (TPA) [1] | FORD CAST [3] | B-312 [1] | 21-4N [2] | 2155 [1] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | % | % | % | % | % | % | % | % | % | % | % |
| CHROMIUM (CR) | 8.5 | 21.0 | 23.7 | 23.8 | 21.0 | 19.0 | 14.0 | 15.0 | 19.7 | 21.0 | 21.0 |
| NICKEL (NI) | — | 1.5 | 47 | 37 | 12.0 | 8.0 | 14.0 | 15.0 | 2.2 | 3.7 | 5.0 |
| CARBON (C) | 0.45 | 0.75 | 0.45 | 0.38 | 0.25 | 0.38 | 0.45 | 1.00 | 0.60 | 0.60 | 0.20 |
| SILICON (SI) | 3.2 | 2.0 | 1.0 MAX | 0.8 | 0.8 | 2.8 | 0.6 | 3.5 | 0.5 MAX | 0.25 MAX | 0.4 |
| MANGANESE (MN) | — | 0.4 | 1.0 MAX | 3.7 | 1.4 | 1.0 | 0.7 | 0.8 | 6.0 | 9.0 | 5.5 |
| MOLYBDENUM (MO) | — | — | 2.7 | 1.3 | — | — | 0.5 MAX | 0.4 | — | — | — |
| TUNGSTEN (W) | — | — | — | — | — | — | 2.5 | — | — | — | — |
| OTHER | — | — | — | — | — | — | — | COPPER 0.25 | NITROGEN 0.2 MAX. | NITROGEN 0.4 | NITROGEN 0.15 |
| | — | — | — | — | — | — | — | — | — | SILICON 0.6 | — |
| IRON (FE) | BAL. | BAL. | BAL. | BAL. | BAL. | BAL. | BAL. | BAL. | BAL. | BAL. | BAL. |

## INTAKE VALVE STEELS

| ELEMENT | SIL F V STEEL | SAE 3140 | SAE 3147 | SAE 6150 [1] | SAE** 9845 | SAE** 9442 |
|---|---|---|---|---|---|---|
| | % | % | % | % | % | % |
| CHROMIUM (CR) | 2.9 | 0.7 | 1.1 | 1.0 | 0.5 | 0.4 |
| NICKEL (NI) | — | 1.3 | — | — | 0.6 | 0.5 |
| CARBON (C) | 0.40 | 0.40 | 0.48 | 0.50 | 0.46 | 0.43 |
| SILICON (SI) | 4.0 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 |
| MANGANESE (MN) | 0.4 | 0.8 | 0.9 | 0.8 | 0.9 | 1.2 |
| MOLYBDENUM (MO) | — | — | — | — | 0.2 | 0.1 |
| TUNGSTEN (W) | — | — | — | — | — | — |
| OTHER | — | — | — | — | — | — |
| | — | — | — | VANADIUM 0.15 MIN | — | — |
| IRON (FE) | BAL. | BAL. | BAL. | BAL. | BAL. | BAL. |

## FACING MATERIALS

| ELEMENT | STELLITE NO.6 [4] | STELLITE F [4] | EATONITE [4] | X-782 [4] | NICHROME (BRIGHTRAY) [4] |
|---|---|---|---|---|---|
| | % | % | % | % | % |
| CHROMIUM (CR) | 27.0 | 24.0 | 29.0 | 26.0 | 20.0 |
| NICKEL (NI) | — | 24.0 | 39.0 | BAL. | BAL. |
| CARBON (C) | 1.25 | 1.60 | 2.40 | 2.00 | 0.20 |
| SILICON (SI) | 2.7 | 1.3 | 1.0 MAX. | 0.4 | 0.3 MAX. |
| MANGANESE (MN) | — | 0.3 | — | 0.5 MAX. | 0.8 |
| MOLYBDENUM (MO) | — | — | — | — | — |
| TUNGSTEN (W) | 4.0 | 12.5 | 15.0 | 9.0 | — |
| COBALT (CO) | 63.0 | 37.0 | 10.0 | 10 MAX. | — |
| OTHER | — | — | — | — | — |
| IRON (FE) | 2.0 | 0.7 | 8.0 MAX. | 4.0 MAX. | 1.0 MAX. |

## SEAT INSERT MATERIALS

| ELEMENT | STELLITE NO.6 [4] | EATONITE [4] | CHROME-MOLY HARD CI. [5] | SPARTA STEEL | SAE 71360 [1] | SIL XB [1] | VSM |
|---|---|---|---|---|---|---|---|
| | % | % | % | % | % | % | % |
| CHROMIUM (CR) | 27.0 | 29.0 | 3.0 | 5.2 | 3.5 | 21.0 | 3.0 |
| NICKEL (NI) | — | 39.0 | — | — | — | 1.5 | — |
| CARBON (C) | 1.25 | 2.40 | 2.20 | 1.00 | 0.55 | 0.75 | 0.65 |
| SILICON (SI) | 2.7 | 1.0 MAX. | 1.8 | 0.4 | 0.2 | 2.0 | 1.0 |
| MANGANESE (MN) | — | — | 0.6 | 0.5 | 0.3 MAX. | 0.4 | 0.6 |
| MOLYBDENUM (MO) | — | — | 3.5 | 1.3 | — | — | 5.0 |
| TUNGSTEN (W) | 4.0 | 15.0 | — | — | 14.0 | — | — |
| COBALT (CO) | 63.0 | 10.0 | — | — | — | — | — |
| OTHER | — | — | — | VANADIUM 0.5 | — | — | — |
| IRON (FE) | 2.0 | 8.0 MAX. | BAL. | BAL. | BAL. | BAL. | BAL. |

NOTES- 1. FERRITIC OR MARTENSITIC (MAGNETIC)
2. SIGMA PHASE (SLIGHTLY MAGNETIC)
3. AUSTENITIC (NON MAGNETIC)
4. NON FERROUS ALLOY (NON MAGNETIC)
5. CAST IRON (MAGNETIC)
* 2112N HAS SAME COMPOSITION WITH 0.10 TO 0.20% NITROGEN
** FORMERLY NATIONAL EMERGENCY STEEL WITH PREFIX "NE" INSTEAD OF "SAE"

ETHYL CORPORATION

## AUTOMATIC AND SEMI-AUTOMATIC TRANSMISSIONS

(Transmissions Listed in Order of Their Introduction Dates)

### Overdrive (Borg Warner Corporation)

Available on DeSoto, Ford, Hudson, Henry J., Kaiser, Lincoln, Mercury, Nash, Packard, Plymouth, Studebaker and Willys. It consists of a planetary gearset and one-way clutch used behind a conventional three-speed transmission. The shift is controlled electrically according to car speed and is actuated by the accelerator. The driving ratio reduction is 30%.

### Hydra-Matic (Detroit Transmission Division GMC)

Available on Cadillac, Hudson, Kaiser, Lincoln, Nash, Oldsmobile and Pontiac. This transmission consists of a fluid coupling with three planetary gearsets providing four forward speeds and reverse. The shifts are automatic and vary with car speed and accelerator position. Ratios are as follows: first, 3.82:1; second, 2.63:1; third, 1.45:1; fourth, 1:1.

### Fluid Drive (Chrysler Corporation)

Used on Chrysler, DeSoto and Dodge. It consists of a semi-automatic four-speed constant-mesh transmission with a fluid coupling and a dry-disc clutch. Either of two forward ranges are selected manually when the foot clutch is disengaged. Shifting between the two ratios in each speed range is controlled by the accelerator pedal at the driver's option at speeds above governor speed. Ratios are as follows: first, 3.57:1; second, 2.04:1; third, 1.75:1; fourth, 1:1.

### Dynaflow (Buick)

This transmission consists of a five-element torque converter (two pumps, one turbine and two stators) with a multiple pinion planetary gearset providing low and reverse ratios. The maximum torque multiplication of the converter is 2.25:1 and no additional gearing is used for normal forward driving. The drive is always through the converter. Low range (1.82:1 gear ratio) can be manually engaged at any throttle position for extra pulling power and engine braking.

### Ultramatic (Packard)

This transmission is composed of a four-element torque converter (one pump, two turbine members and a stator), a multiple pinion planetary transmission to provide low and reverse, and a direct drive clutch. The maximum torque multiplication of the converter is 2.4:1 and it is used only for accelerating. The direct drive clutch locks the pump and turbine together into a solid drive for part throttle operation. The shift to direct drive is controlled automatically by the car speed and accelerator position. Low range (1.82:1 gear ratio) can be manually engaged for extra power or engine braking.

### Powerglide (Chevrolet)

The Powerglide transmission used on the Chevrolet has a five-element torque converter with a multiple pinion planetary transmission to pro-

vide low and reverse gears. The maximum torque multiplication of the converter is 2.2:1 and no gear changes are required for normal driving. The drive is always through the converter. Low range (1.82:1 gear ratio) can be manually engaged at any throttle position for extra pulling power or engine braking.

Studebaker Automatic Transmission

This transmission has a three-element torque converter, a direct drive clutch and two planetary gearsets providing three forward speeds and reverse. Normal drive starts through the torque converter and intermediate gear ratio and shifts to solid direct drive depending on car speed and throttle opening. The torque converter has a maximum ratio of 2.15:1 and the gear ratios are as follows: first, 2.31:1; second, 1.43:1; third, 1:1. Low range can be manually engaged for extra pulling power or engine braking.

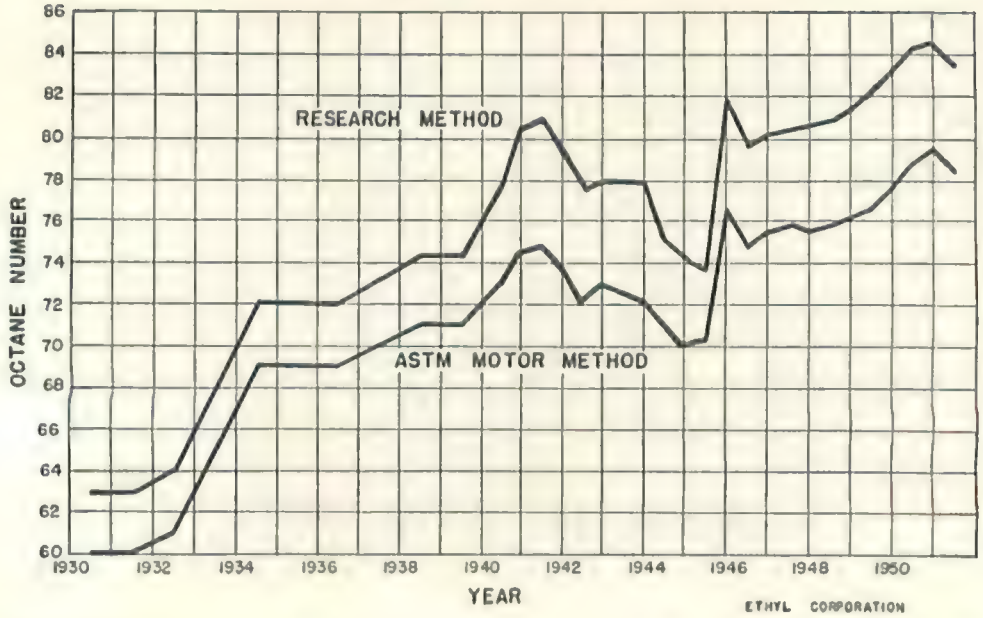
Fordomatic and Merc-O-Matic (Ford and Mercury)

This transmission is composed of a three-element torque converter and a multiple pinion planetary gear system to produce three forward speeds and reverse. The drive is always through the converter which has a maximum torque multiplication of 2.1:1. Normal drive starts through the torque converter and intermediate gear ratio (1.48:1) and automatically shifts to converter only, depending on throttle opening and car speed. Low range (2.44:1 gear ratio) can be manually engaged for extra pulling power or engine braking.

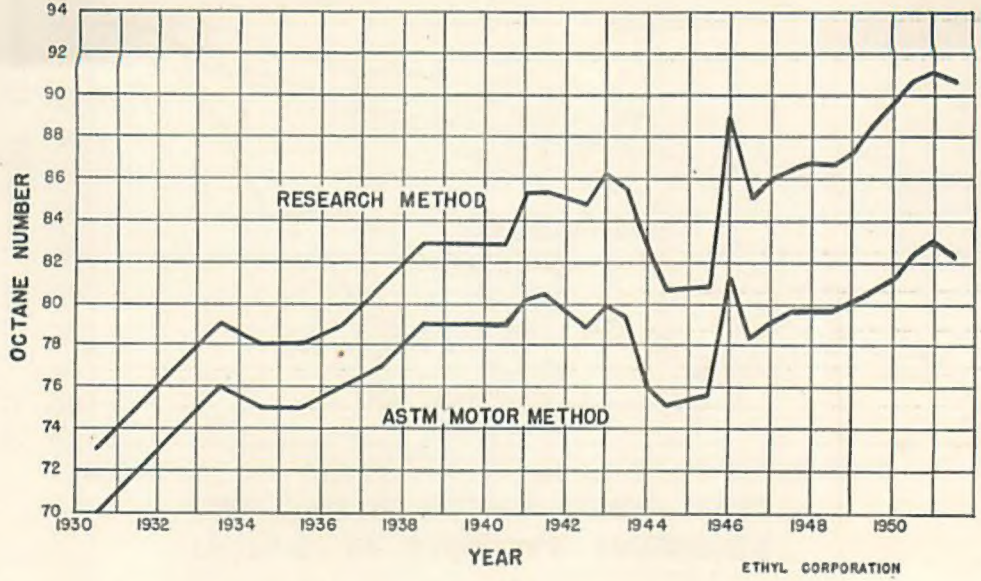
Fluid-Torque (Chrysler Corporation)

This transmission is used on the Chrysler 6 and V-8 and the DeSoto V-8 passenger cars. It consists of a four-element torque converter with the M-6 semi-automatic four-speed constant mesh transmission described under Fluid Drive. The torque converter has a maximum torque multiplication of 2.34:1 and the drive is always through the converter. Ratios used in this transmission with the torque converter are first, 3.28:1; second, 2.04:1; third, 1.61:1; and fourth, 1:1.

## TREND IN ANTIKNOCK QUALITY OF REGULAR GASOLINES SOLD IN THE UNITED STATES

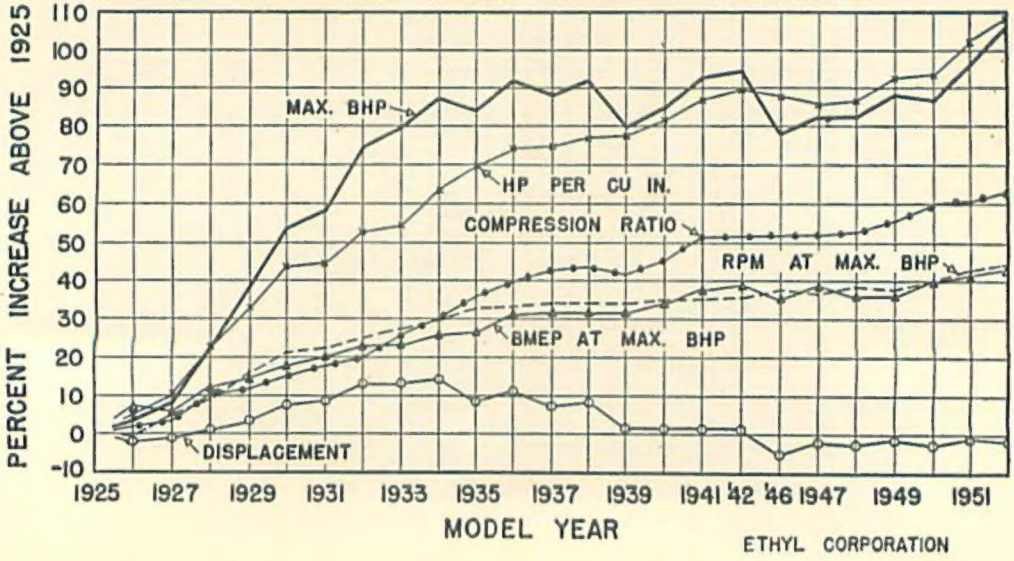


## TREND IN ANTIKNOCK QUALITY OF PREMIUM GASOLINES SOLD IN THE UNITED STATES



# TRENDS OF AMERICAN PASSENGER CAR ENGINE DESIGN SINCE 1925

## AVERAGES OF VALUES LISTED IN TRADE PUBLICATIONS

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